

**Florida Department of Education**  
**Curriculum Frameworks**

**Health Science**

Florida Department of Education  
Curriculum Framework

**Course Title:** Health Science Education Directed Study  
**Career Cluster:** Health Science Cluster

**Secondary – Career Preparatory**

Course Number	8400100
CIP Number	0317999910
Grade Level	10-12
Standard Length	Multiple credits
Teacher Certification	Refer to the <b><u>Course Structure</u></b> section.
CTSO	HOSA: Future Health Professionals

**Purpose**

The purpose of this course is to provide students with learning opportunities in a prescribed program of study within the Health Science cluster that will enhance opportunities for employment in the career field chosen by the student.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Course Structure**

The content is prescribed by the instructor based upon the individual student's assessed needs for directed study.

This course may be taken only by a student who has completed or is currently completing a specific secondary job preparatory program or occupational completion point for additional study in this career cluster. A student may earn multiple credits in this course.

The selected standards and benchmarks, which the student must master to earn credit, must be outlined in an instructional plan developed by the instructor.

To teach the course listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary course structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8400100	Health Science Education Directed Study	ANY HEALTH OCCUP G *(See DOE approved list)	Multiple credits	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate expertise in a specific occupation contained within the career cluster.
- 02.0 Conduct investigative research on a selected topic related to the career cluster using approved research methodology, interpret findings, and prepare presentation to defend results.
- 03.0 Apply enhanced leadership and professional career skills.
- 04.0 Demonstrate higher order critical thinking and reasoning skills appropriate for the selected program of study.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Health Science Education Directed Study  
**Course Number:** 8400100  
**Course Credit:** Multiple Credits

**CTE Standards and Benchmarks**

01.0	Demonstrate expertise in a specific occupation within the career cluster. - The student will be able to:
01.01	The benchmarks will be selected from the appropriate curriculum frameworks and determined by the instructor based upon the individual students assessed needs.
02.0	Conduct investigative research on a selected topic related to the career cluster using approved research methodology, interpret findings, and prepare presentation to defend results. - The student will be able to:
02.01	Select investigative study referencing prior research and knowledge.
02.02	Collect, organize and analyze data accurately and precisely.
02.03	Design procedures to test the research.
02.04	Report, display and defend the results of investigations to audiences that may include professionals and technical experts.
03.0	Apply enhanced leadership and professional career skills. - The student will be able to:
03.01	Develop and present a professional presentation offering potential solutions to a current issue.
03.02	Enhance leadership and career skills through work-based learning including job placement, job shadowing, entrepreneurship, internship, or a virtual experience.
03.03	Participate in leadership development opportunities available through the appropriate student organization and/or other professional organizations.
03.04	Enhance written and oral communications through the development of presentations, public speaking, and live and/or virtual interviews.
04.0	Demonstrate higher order critical thinking and reasoning skills appropriate for the selected program of study. - The student will be able to:
04.01	Use mathematical and/or scientific skills to solve problems encountered in the chosen occupation.
04.02	Read and interpret information relative to the chosen occupation.
04.03	Locate and evaluate key elements of oral and written information.
04.04	Analyze and apply data and/or measurements to solve problems and interpret documents.
04.05	Construct charts/tables/graphs using functions and data.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Skills and Services  
**Program Type:** Non Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Non Career Preparatory**

Program Number	8400320
CIP Number	03179997PA
Grade Level	9-12
Standard Length	1 credit
Teacher Certification	Refer to the <b><u>Course Structure</u></b> section.
CTSO	HOSA: Future Health Professionals

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to give students an opportunity to apply knowledge and skills related to the area of Health Science career cluster.

The content includes but is not limited to practical generic skills in health occupations.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Course Structure**

This program is a planned sequence of instruction totaling one credit.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary course/program structure:



Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8400320	Medical Skills and Services	ANY HEALTH OCCUP G (See DOE approved list) HEALTH 6	1 credit	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to communicate effectively.
- 02.0 Apply basic mathematics skills used in health care.
- 03.0 Demonstrate knowledge of the services provided by health occupations career clusters.
- 04.0 Recognize and practice basic health skills.
- 05.0 Demonstrate first aid, CPR and BLS.
- 06.0 Demonstrate knowledge of legal aspects of healthcare delivery.
- 07.0 Demonstrate an understanding of and apply concepts of whole body wellness.
- 08.0 Demonstrate knowledge of blood borne diseases, including AIDS.
- 09.0 Demonstrate and understanding of technology applications in healthcare.
- 10.0 Demonstrate employability skills.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Medical Skills and Services  
**Course Number:** 8400320  
**Course Credit:** 1

**COURSE DESCRIPTION:**

The purpose of this course is to assist students in making informed decisions about their future academic and occupational goals and to provide information regarding careers and skills in the Health Science career cluster. The content of this course includes, but is not limited to: employability and communication skills, legal and technological aspects of health care, medical mathematics, services provided by health science professions, mental health and wellness, occupational safety, and basic health science skills

**CTE Standards and Benchmarks**

01.0 Demonstrate the ability to communicate effectively. – The student will be able to:

01.01 Respond to verbal and non-verbal communication.

01.02 Develop active listening skills.

01.03 Demonstrate ability to follow written and oral directions.

01.04 Analyze elements of constructive and non-constructive criticism.

01.05 Define, pronounce and spell common medical terms and abbreviations necessary to safely carry out medical instructions.

01.06 Demonstrate awareness of and sensitivity to barriers to communication, including cultural differences, language, and disability.

02.0 Apply basic mathematics skills used in health care. – The student will be able to:

02.01 Measure and record height and weight using a variety of measurement systems used in health care.

02.02 Convert common weights, measures and volumes to and from metric as applied in the healthcare setting.

02.03 Convert from regular to 24-hour clock time.

02.04 Perform mathematical calculations to solve numeric, symbolic, and word problems relevant to healthcare occupations and/or medical scenarios.

03.0 Demonstrate knowledge of the services provided by health occupations career clusters. – The student will be able to:

## CTE Standards and Benchmarks

03.01 Discuss the history of health care services and medical progress in the (5) health science career pathway, such as developments in diagnostic technology, sterilization, electronic health records, etc. .

03.02 Identify the basic components of the health care delivery system.

03.03 Describe at least 2 occupations for each health science pathway, 3 types of services provided by each career chosen and perform at least 2 skills for each career chosen:

03.03.01 Therapeutic Services

03.03.02 Diagnostic Services

03.03.03 Health Informatics

03.03.04 Support Services

03.03.05 Biotechnology Research and Development

03.04 Research or explore at 3 “alternative medicine: occupations and services of each.

04.0 Recognize and practice basic health skills. – The student will be able to:

04.01 Demonstrate proper hand cleansing, including proper hand-washing and proper use of alcohol-based hand gel.

04.02 Demonstrate proper application and disposal of Personal Protective Equipment (gloves, gown, mask, goggles)

04.03 Perform proper body mechanics to prevent injury to patients and self.

04.04 Apply infection control techniques designed to prevent the spread of diseases to the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.

04.05 Demonstrate how to prevent accidents, injuries and infection in accordance with OSHA standards.

04.06 Demonstrate fire safety in medical facilities including RACE and PASS procedures.

04.07 Analyze the parts of the chain of infection and how to break it.

04.08 Demonstrate and record vital signs to include temperature, pulse, blood pressure, and respirations while recognizing the normal range for each.

04.09 Demonstrate vision screening.

04.10 Demonstrate ability to test for hearing using simple tools.

04.11 Demonstrate ability to test reflexes.

05.0 Demonstrate first aid, CPR, and BLS. – The student will be able to:

05.01 Describe wounds and the appropriate first aid treatment.

## CTE Standards and Benchmarks

05.02	Identify various types of shock and their treatments.
05.03	Recognize types of poisoning and treatment.
05.04	Identify classifications of burns and their appropriate treatment.
05.05	Describe ill effects of heat and cold and the appropriate first aid for each.
05.06	Demonstrate immobilization for suspected fractures.
05.07	Recognize the signs, symptoms, and appropriate first aid for each of the following: 05.07.01 Heart attack 05.07.02 Fainting and seizures 05.07.03 Diabetic reactions 05.07.04 Stroke
05.08	Describe first aid for foreign objects in the eye and ear.
05.09	Perform skills in BLS.
05.10	Demonstrate first aid for choking.
05.11	Demonstrate activation of the Emergency Medical System (EMS).
06.0	Demonstrate knowledge of legal aspects of healthcare delivery. – The student will be able to:
06.01	Identify how laws (i.e. “Good Samaritan”) protect first responders with healthcare delivery in all settings including emergent situations.
06.02	Describe the need for advanced directives and health care surrogate.
06.03	Describe legal procedures for donating organs.
06.04	Describe the need for health insurance and the different types available.
07.0	Demonstrate an understanding of and apply concepts of whole body wellness. – The student will be able to:
07.01	Define stress/stressors.
07.02	Identify problem solving skills to resolve stress.
07.03	Demonstrate stress reduction techniques.
07.04	Demonstrate knowledge of Mental Health as a legitimate illness, equivalent to all general health conditions.

## CTE Standards and Benchmarks

07.05	Identify factors that explain why health occupations are emotionally and physically demanding.
07.06	Demonstrate coping strategies for dealing with mental and emotional health issues
07.07	Identify the needs of the terminally ill.
07.08	Recognize the steps in the grief process.
07.09	Describe special considerations when working with terminally ill patients and their families.
08.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
08.01	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens.
08.02	Distinguish between outbreak, epidemic, endemic, and pandemic.
08.03	Identify community resources and services available to the individual with diseases caused by blood borne pathogens.
08.04	Identify at risk behaviors which promote the spread of HIV/AIDS and the public education necessary to combat the spread of diseases caused by blood borne pathogens.
08.05	Demonstrate knowledge of the legal aspect of HIV/AIDS, including testing.
09.0	Demonstrate an understanding of technology applications in healthcare. – The student will be able to:
09.01	Differentiate between the various computer based diagnostic studies in healthcare (ex: X-ray, MRI, CT scan, and CPET).
09.02	Discuss how computers affect legal and ethical questions in the health field.
09.03	Analyze how HIPPA regulations affect the privacy of electronic health records.
09.04	Discuss the use of Electronic Health Records, including information included and necessary protections.
09.05	Demonstrate how to scan, fax, and send by email information / documents.
09.06	Discuss the security of Electronic Health Records and other electronic communications.
10.0	Demonstrate employability skills. – The student will be able to:
10.01	Identify local job openings in health care.
10.02	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments, and career growth potential.
10.03	Complete a job application.

## CTE Standards and Benchmarks

10.04 Participate in a job interview.

10.05 Create a cover letter and resume.

10.06 Discuss professionalism and the ethical role and responsibility of the healthcare worker.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

### **Special Notes**

The cooperative method of instruction is not appropriate for this course.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Course Title:** Health Science Education Cooperative OJT  
**Course Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Cooperative Education - OJT**

Course Number	8400410
CIP Number	03179999CP
Grade Level	10-12
Standard Length	Multiple credits
Teacher Certification	Refer to the <b><u>Course Structure</u></b> section.
CTSO	HOSA: Future Health Professionals

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science cluster(s); provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science cluster(s).

**Each student job placement must be related to the job preparatory program in which the student is enrolled or has completed.**

The purpose of this course is to provide the on-the-job training component when the **cooperative method of instruction** is appropriate. Whenever the cooperative method is offered, the following is required for each student: a training agreement; a training plan signed by the student, teacher and employer, including instructional objectives; a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal; and a site supervisor with a working knowledge of the selected occupation. The workstation may be in an industry setting or in a virtual learning environment. The student **must be compensated** for work performed.

The teacher/coordinator must meet with the site supervisor a minimum of once during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

Health Science Cooperative OJT may be taken by a student for one or more semesters. A student may earn multiple credits in this course. The specific student performance standards which the student must achieve to earn credit are specified in the Cooperative Education - OJT Training Plan.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Course Structure**

To teach the course listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary course structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8400410	Health Science Education Cooperative OJT	ANY HEALTH OCCUP G *(See DOE approved list)	Multiple credits	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Perform designated job skills.
- 02.0 Demonstrate work ethics.

Florida Department of Education  
Student Performance Standards

Program Title: Health Science Education Cooperative OJT  
Secondary Number: 8400410

<b>Standards and Benchmarks</b>	
01.0	Perform designated job skills. - The student will be able to:
01.01	Perform tasks as outlined in the training plan.
01.02	Demonstrate job performance skills.
01.03	Demonstrate safety procedures on the job.
01.04	Maintain appropriate records.
01.05	Attain an acceptable level of productivity.
01.06	Demonstrate appropriate dress and grooming habits.
02.0	Demonstrate work ethics. - The student will be able to:
02.01	Follow directions.
02.02	Demonstrate good human relations skills on the job.
02.03	Demonstrate good work habits.
02.04	Demonstrate acceptable business ethics.

## Additional Information

### Special Notes

There is a **Cooperative Education Manual** available online that has guidelines for students, teachers, employers, parents and other administrators and sample training agreements. It can be accessed on the DOE website.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is/are the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified. Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Exercise Science  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417000
CIP Number	0331050405
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 39-9031 Fitness Trainers and Aerobics Instructors

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, applied aspect of leadership, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Work based learning experiences are an integral part of this program.

The purpose of this program is to prepare students for the wellness and fitness marketplace and its various components such as instructing or coaching groups or individuals in exercise activities and the fundamentals of an individual's health and wellness. Personal trainers demonstrate techniques and methods of participation and observe participants and inform them of corrective measures necessary to improve their skills and personal health.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417100) is required as a prerequisite for all programs and options. Secondary students completing the two required core courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417120	Exercise Science	PH THER TEC @7 G HEALTH FIT SPEC 7G MED PROF 7 G	1 credit	39-9031	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-34 encompass Exercise Science:**

- 28.0 Demonstrate a working knowledge of current and legal issues in fitness and wellness.
- 29.0 Outline the process of developing a successful personal training business.
- 30.0 Identify and describe basic human anatomy and physiology in relation to personal fitness or personal training.
- 31.0 Understand the theories and practices of exercise physiology.
- 32.0 Classify and demonstrate competence and skill in the care and prevention of athletic injuries.
- 33.0 Apply principles of nutrition and wellness in assessing health and wellness.
- 34.0 Describe the characteristics of positive client experience and customer service.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Exercise Science  
**Course Number:** 8417120  
**Course Credit:** 1

**Course Description:**

This course prepares students to be employed as Personal Trainers. Content includes, but not limited to, identifying and practicing within the appropriate scope of practice for a personal trainer, develop and implement exercise programs for apparently healthy individuals or those who have medical clearance to exercise, proficiency in the appropriate fitness equipment used, as well as a foundation in the musculo-skeletal system of the body.

<b>CTE Standards and Benchmarks</b>	
28.0	Demonstrate a working knowledge of current and legal issues in fitness and wellness. – The student will be able to:
28.01	Demonstrate an understanding of negligence and basic legal terms.
28.02	Demonstrate an understanding of contract law.
28.03	Demonstrate an understanding of labor laws and their purpose in Florida.
28.04	Demonstrate an understanding of workers compensation law.
28.05	Demonstrate an understanding of tort law and its significance in the health field.
28.06	Demonstrate an understanding of disability laws.
28.07	Identify the personal trainers’ responsibilities and duties within their legal scope of practice.
28.08	Discuss the legal and ethical consequences of drug use with a focus on performance enhancing drugs and supplements.
28.09	Outline and present a current and/or legal issue related to fitness and wellness.
28.10	Demonstrate knowledge of the Health Insurance Portability and Accountability Act (HIPAA).
29.0	Outline the process of developing a successful personal training business. – The student will be able to:
29.01	Describe the qualities and characteristics of uncompromising customer service.

## CTE Standards and Benchmarks

29.02	Describe strategies for finding an ideal workplace.
29.03	Demonstrate the process of writing a resume.
29.04	Describe the four P's of marketing.
29.05	Demonstrate basic membership sales techniques, including strategies for solicitation of new sales and how to closes sales.
30.0	Identify and describe basic human anatomy and physiology in relation to personal fitness or personal training. – The student will be able to:
30.01	Analyze directional terms referring to areas of the body.
30.02	Evaluate the structure of the human skeleton form, including the structure and function of the different types of muscles.
30.03	Compare and contrast the different muscle contractions including concentric, eccentric and isometric.
30.04	Identify the origin, insertion and action for each major muscle.
30.05	Evaluate the anatomy and physiology of each of the following systems and how they interact with each other:
30.05.01	nervous system
30.05.02	musculoskeletal
30.05.03	circulatory
30.05.04	cardiac
30.05.05	pulmonary
30.05.06	respiratory
31.0	Understand the theories and practices of exercise physiology. - The student will be able to:
31.01	Perform client education utilizing concepts of communication and differing learning styles.
31.02	Classify health fitness standards, including components of wellness, describe health appraisals, fitness assessments, and exercise prescriptions.
31.03	Compare and contrast lifestyle factors that improve health and increase longevity.
31.04	Describe the relationship between the agonist, antagonist, fixators and synergist for muscle movement.
31.05	Demonstrate an understanding of common training types.
31.06	Identify risk factors that may interfere with safe participation in exercise
31.07	Assess and research various techniques to assess body composition and its relationship to assessment of recommended body weight.
31.08	Evaluate and explain the physiology of weight loss and management.

## CTE Standards and Benchmarks

31.09	Prepare and explain a beneficial lifetime exercise program and staying healthy in relation to cardio-respiratory exercise prescriptions.
31.10	Define cardio-respiratory endurance and the benefits of cardio-respiratory endurance training.
31.11	Define aerobic and anaerobic exercise and examples of each.
31.12	Define and identify the principles that govern cardio-respiratory exercise prescription: Frequency, Intensity, Time and Type of Exercise.
31.13	Demonstrate an understanding of length tension relationship and how it relates to muscles.
31.14	Demonstrate an understanding of the concept of force coupling and how it relates to muscles.
31.15	Differentiate between muscular strength and muscular endurance and types.
31.16	Define and understand muscular flexibility.
31.17	Define and understand the role of fitness in relation to stress management and maintaining health.
31.18	Evaluate the physiological effects of illness, alcohol, tobacco and drugs.
31.19	Describe the relationship between fitness and aging.
31.20	Define and describe factors on how to select appropriate exercise.
31.21	Demonstrate safe and proper techniques in using fitness, protective and personal training equipment.
31.22	Prepare and present experiences to help individuals enhance their personal health, as well as develop sound programs for others.
32.0	Classify and demonstrate competence and skill in the care and prevention of injuries. – The students will be able to:
32.01	Demonstrate skills necessary to recognize the causes and preventative measures associated with athletic participation.
32.02	Demonstrate knowledge and understanding of the care and prevention of fitness related injuries.
32.03	Define and describe the safe and effective use of selected exercise training methods, including various forms of resistance and proprioception modalities.
32.04	Identify acceptable selection and usage of reconditioning techniques.
33.0	Apply principles of nutrition and wellness in assessing health and wellness. - The student will be able to:
33.01	Demonstrate an understanding of supplementation including benefits, indications and contraindications
33.02	Define basic nutrition and describe its relationship to health, wellness, and weight management, to include various diets, disease prevention, and the risks of fad diets .



## CTE Standards and Benchmarks

33.03 Discuss the national Dietary Guidelines for Americans.

33.04 Identify and describe the relationship between nutrition, diet and athletic performance.

33.05 Create a nutrition and wellness research paper.

34.0 Describe the characteristics of positive client experience and customer service. - The student will be able to:

34.01 Describe the characteristic of a positive client experience.

34.02 Explain the stages of change model.

34.03 Describe characteristics of what effective communication skills are.

34.04 Describe the elements of effective SMART goal-setting techniques.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

The purpose of the programs in this cluster is to prepare students for employment or advanced training in the health occupations industry. The programs in this cluster also provide students the opportunity to be cross-trained in a variety of entry level positions.

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

However, In order for students to participate in the ACSM Certified Personal Trainer Certification exam they must be 18 years of age, have earned a high school diploma, and hold a current Adult AHA CPR certification.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Allied Health Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417130
CIP Number	0317029903
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes performing skills representative of one to three areas of allied health care in the laboratory and clinical settings. Major areas of allied health are defined as physical therapy, radiation, laboratory and respiratory medicine, and occupational therapy. **Such competencies must remain at the aide level and not go beyond the scope of practice of unlicensed assistive personnel. Invasive procedures that fall into the nursing scope of practice are not to be added.** Clinical experience is defined as activities performed in the clinical setting under the supervision of a health professional duly certified/licensed in the selected occupational fields. Simulated labs are not a substitute for clinical experience. School certificates for this module must be for “Allied Health Assistant”. Specific competencies may be listed on the back.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs and options. Secondary students completing the two required core courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy & Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417131	Allied Health Assisting 3		1 credit	31-9099	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-29 encompass competencies specific to Allied Health Assisting 3:**

- 28.0 Perform skills representative of at least one (1) to three (3) major allied health areas in the school laboratory before beginning the clinical phase.
- 29.0 Successfully complete a clinical rotation in at least one (1) to three (3) major allied health areas.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.



**Florida Department of Education  
Student Performance Standards**

**Course Title:** Allied Health Assisting 3  
**Course Number:** 8417131  
**Course Credit:** 1

**Course Description:**

In this course students will perform skills representative of one to three areas of allied health care in the laboratory and clinical settings.

<b>CTE Standards and Benchmarks</b>	
28.0	Perform skills representative of 1-3 major allied health areas in the school laboratory before beginning the clinical phase. – The student will be able to:
28.01	Perform skills related to the body systems.
28.02	If unlicensed clinical laboratory type skills is one of the selected allied health areas to be taught, only procedures that are exempt from clinical laboratory personnel licensure requirements will be presented and students will:
28.02.01	Perform waived testing on blood and urine such as glucose, A1C, and hemoglobin.
28.02.02	Describe the process for preparing a blood slides for differential blood count.
28.02.03	Report urine specific gravity, color and characteristics.
28.02.04	Perform centrifuge operation and maintenance.
28.02.05	Name (or identify) and explain the use of the common instruments/equipment found in the clinical laboratory.
28.02.06	Demonstrate knowledge of specimen differentiation and procedure interference's.
28.02.07	Perform communication skills specifically related to laboratory science.
28.02.08	Discuss the process of performing venipunctures.
28.02.09	Name and discuss the specialty areas within laboratory (hematology, clinical chemistry, microbiology, etc.).
28.02.10	Explain the criteria set forth in CLIA to classify laboratory testing as waived, moderate complexity or high complexity.
28.02.11	Explain the levels and qualifications for testing personnel as set forth in CLIA (complexity based) and as established by state law (licensure categories).
28.03	If unlicensed physical restorative type skills is one of the selected allied health areas to be taught, students will:
28.03.01	Describe the functions of bones and muscles as related to the practice of physical therapy.
28.03.02	Define disability and identify types of disabilities.
28.03.03	Name and discuss the avenues of physical therapy practice.
28.03.04	Describe equipment used in physical therapy.
28.03.05	Perform safe body mechanics and transfer
28.03.06	Demonstrate an understanding of the use of modalities (i.e. Ultrasound, heat and cold therapeutic massage, E-STEM, wound care, elastic stockings).

## CTE Standards and Benchmarks

28.03.07	Describe the process of hydrotherapy.
28.03.08	Perform communication skills specifically related to physical therapy.
28.03.09	Identify, describe, and demonstrate the use of devices such as crutches, walkers, canes, and wheelchairs.
28.03.10	Demonstrate techniques used in active and passive range of motion exercises.
28.03.11	Instruct patients in bed/wheelchair mobility.
28.03.12	Describe the relationship between long-term and short-term goals.
28.04	If unlicensed occupational restorative type skills is one of the selected allied health areas to be taught, students will:
28.04.01	Assist clients to eat using prompting.
28.04.02	Identify augmented communication devices and purposes of each.
28.04.03	Describe equipment used in occupational therapy.
28.04.04	Describe the splint making process.
28.04.05	Perform feeding and dressing skills using adaptive equipment.
28.04.06	Perform feeding and dressing skills using one hand.
28.04.07	Perform communication skills specifically related to occupational therapy.
28.04.08	Perform and instruct range of motion exercises.
28.04.09	Name and discuss the avenues of occupational therapy practice.
28.04.10	Train the client in activities of daily living skills such as clothing care skills, food preparation, and money management.
28.05	If unlicensed respiratory restorative type skills is one of the selected allied health areas to be taught, students will:
28.05.01	Name and discuss the avenues of respiratory care practice.
28.05.02	Describe common respiratory diseases (asthma, emphysema, chronic bronchitis, and atelectasis) and common medications used to treat respiratory diseases.
28.05.03	Recognize normal breath sounds when auscultating the chest with a stethoscope.
28.05.04	Describe the use of gas reducing and flow regulating equipment.
28.05.05	Demonstrate and discuss the use of incentive spirometers.
28.05.06	Differentiate between various oxygen delivery devices (nasal cannulas, simple and re-breathing masks, oxy-hoods, and enclosures).
28.05.07	Stock shelves with, process, and perform preventative maintenance on respiratory care equipment.
28.05.08	Check emergency equipment assigned to respiratory care.
28.05.09	Demonstrate/discuss the use of postural drainage and percussion.
28.05.10	Discuss and practice the use of the pulse oximeter.
28.05.11	Describe the equipment and use of humidity/aerosol.
28.06	If medical administrative assisting type skills is one of the selected allied health areas to be taught, students will:
28.06.01	Demonstrate an understanding of basic medical terminology e.g. prefixes, suffixes, abbreviations, and root words related to major body systems.
28.06.02	Demonstrate an understanding of straight numerical, alphabetical and terminal digit filing.
28.06.03	Demonstrate computer literacy, keyboarding and retrieval skills.
28.06.04	List procedures for scheduling and referring patients, handling walk-in emergency patients, and telephone etiquette, and procedures.

## CTE Standards and Benchmarks

28.06.05	Understand what is required to create and submit a medical bill
28.06.06	Define a release of medical information, explanation of benefit, assignment of benefit, and electronic remittance advice.
28.06.07	Develop an understanding of healthcare coverage and be able to interpret the information contained on the patient's insurance card.
28.06.08	Discuss the various types of medical records such as electronic health record (EHR), digital records, and paper records with regard to content and security.
28.06.09	Understand the financial terms and procedures involved in operating a medical office practice including, income, expense, accounts receivable, accounts payable, cash and accrual accounting, write-off adjustments.
28.07	If unlicensed Radiologic type skills is one of the selected allied health areas to be taught, students will:
28.07.01	Compare and contrast the development of x-rays through digital media or through film.
28.07.02	Identify the function of a cassette, film, and screen.
28.07.03	Describe how radiation produces an image on film and through digital technology.
28.07.04	Identify the process by which x-ray film is developed.
28.07.05	Identify anatomical position and terminology medial, lateral, superior, inferior, anterior/ventral, and posterior/dorsal).
28.07.06	Identify patient properly to include doing the correct procedure on the correct patient in the right location (check identification band, etc.).
28.07.07	Explain appropriate exam(s) to the patient.
28.07.08	Perform safe body mechanics and transferring skills of patient onto x-ray table.
28.07.09	Position patient for exam(s) (chest, KUB, hand and foot).
28.07.10	Position x-ray tube to simulate exposure for exam(s) (chest, KUB, hand, and foot).
28.07.11	Position patient in supine, prone, lateral, oblique, AP, PA of appropriate part.
28.08	If unlicensed geriatric type skills are to be taught, students will:
28.08.01	Recognize types of long term care facilities and levels of care.
28.08.02	Be familiar with legislation affecting long term care.
28.08.03	Discuss physical and emotional effects of aging and appropriate ways of dealing with them.
28.08.04	Recognize the stages of dementia and the care of residents in each stage.
28.08.05	Discuss reality orientation, reminiscing, and validation therapy.
28.08.06	Describe ways to meet the nutritional needs through diet, dietary supplements, and mechanisms to provide supplements.
28.08.07	Provide for the safety of the elderly and chronically ill patient, including prevention of falls, prevention of infections, provision of a safe environment and prompt attendance to patients' needs.
28.08.08	Check integrity of patient's skin condition and take appropriate actions when needed.
28.08.09	Recognize common chronic illnesses and the special care required.
28.08.10	Provide appropriate end of life care.
28.08.11	Describe common medications taken by the elderly and chronically ill, their effects, and side effects.
28.09	If electrocardiograph technician skills are to be taught, students will:
28.09.01	Describe the cardiovascular system.
28.09.01.1	Correlate the anatomy of the heart to the placement of leads for an EKG including special needs populations.
28.09.01.2	Correlate the electrical conduction system of the heart to the rhythms.

**CTE Standards and Benchmarks**

28.09.01.3	Compare and contrast polarization, depolarization and repolarization as it applies to patient care scenarios.
28.09.01.4	Describe the usual pattern of electrical flow through the conduction system including the five major areas and physical layout.
28.09.01.5	Give the inherent rates for the SA node, the AV junction, and the ventricles.
28.09.02	Demonstrate an understanding of the role and responsibilities of the EKG tech.
28.09.02.1	Recognize and practice legal and ethical responsibilities as they relate to an EKG tech.
28.09.02.2	Prepare and maintain all EKG equipment
28.09.02.3	Identify patient and verify the requisition order.
28.09.02.4	State precautions required when performing diagnostic procedures.
28.09.02.5	Recognize a cardiac emergency.
28.09.03	Demonstrate knowledge of, apply and use medical instrumentation modalities.
28.09.03.1	Calculate a patient's heart rate from the EKG tracing (for example 6-second method).
28.09.03.2	Perform a 12 lead EKG.
28.09.04	Recognize normal and abnormal monitoring.
28.10	If unlicensed veterinary type skills is one of the selected allied health areas to be taught, students will:
28.10.01	Discuss ethical considerations related to animal care and use.
28.10.02	Describe Science within the animal care industry.
28.10.03	Identify common domestic animal species and breeds.
28.10.04	Apply academic skills to animal care situations, terminology, and veterinary medical dosages.
28.10.05	Describe basic concepts of animal nutrition.
28.10.06	Provide appropriate general care to a variety of common companion animal species.
28.10.07	Safely handle, restrain, confine, and examine companion animals,
28.10.08	Demonstrate proper grooming techniques for animals.
28.10.09	Describe how to socialize young animals and how to perform basic obedience training for dogs.
28.10.10	Describe and demonstrate procedures for identifying, preventing, and controlling diseases of companion animals and zoonotic diseases.
28.10.11	Describe basic knowledge of laboratory procedures used in veterinary practice.
28.10.12	Assist with veterinary nursing procedures.
28.10.13	Demonstrate knowledge of veterinary office procedures.
28.11	If biomedical research type skills is one of the selected allied health areas to be taught, students will:
28.11.01	Comprehend technical vocabulary.
28.11.02	Document lab results accurately.
28.11.03	Recognize hazardous lab conditions.
28.11.04	Maintain safe work environment, including but not limited to correct handling, storing, and disposing of hazardous materials, and use of personal protective equipment.
28.11.05	Research regulatory bodies (OSHA, NIH, NR, DOT, EPA, CDC, NRC, CLIA, DEA and FDA)

<b>CTE Standards and Benchmarks</b>	
28.11.06	Discuss testing methods and inspection procedures in relation to quality control.
28.11.07	Monitor environmental conditions of research facility (growth chamber, greenhouse, seed storage room, animal housing or manufacturing site).
28.11.08	Discuss the proper utilization of test plants and animals.
28.11.09	Prepare solutions and reagents for laboratory use.
28.11.10	Operate laboratory equipment.
28.11.11	Identify common microorganisms.
28.11.12	Explain how to culture and perform bioassays.
28.11.13	Discuss genetic engineering skills.
28.11.14	Utilize problem solving skills.
28.11.15	Practice asepsis.
28.11.16	Discuss sterilization techniques, including proper packaging of sterile goods.
29.0	Successfully complete a clinical rotation in at least one (1) to Three (3) major allied health areas. -- The student will be able to:
29.01	Demonstrate or observe skills in the clinical setting as outlined in the above standard.
29.02	Complete One (1) - three (3) clinical rotations under the supervision of a duly licensed/certified allied health care professional.
29.03	Exhibit behavior consistent with the professional ethics required of each of the allied health areas being studied.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

For each skill set, the teacher certification used must also be able to teach programs that encompass the competencies being taught. The teacher certifications that teach the individual skill sets should be experienced and capable in the skills themselves in order to teach.

Following the completion of the Health Science Anatomy and Physiology and Health Science Foundations courses, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Aide  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417140
CIP Number	0351060103
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to provide classroom theory and practical application in tasks related to dental office asepsis and sterilization and disinfection procedures in the dental environment. It is designed to prepare students for employment as dental aides specializing as dental sterilization technicians (industry title) SOC 31-9099 (Healthcare Support Workers, all other) in a dental office or clinic, or to pursue advanced postsecondary dental science education.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs and options. Secondary students completing the two required core courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417141	Dental Aide 3	DENTL ASST @7 7G	1 credit	31-9099	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 31-43 encompass competencies specific to Dental Aide 3:**

- 28.0 Use dental terminology.
- 29.0 Identify structures and explain functions and pathologies of dental anatomy.
- 30.0 Identify disease prevention and perform infection control procedures.
- 31.0 Describe the legal and ethical responsibilities of the dental health care worker.
- 32.0 Identify, describe, and maintain dental instruments and equipment.

- 33.0 Identify properties and uses of dental materials which include gypsum, restorative material, acrylics, dental cements, impression materials and waxes.
- 34.0 Describe basic dental laboratory procedures.
- 35.0 Describe dental assisting duties.
- 36.0 Identify specialty dental procedures.
- 37.0 Identify dental business office procedures.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Dental Aide 3  
**Course Number:** 8417141  
**Course Credit:** 1

**Course Description:**

This course provides classroom theory and practical application in tasks related to dental office asepsis and sterilization and disinfection procedures in the dental environment. It is designed to prepare completers for employment as dental aides specializing as dental sterilization technicians. It also provides an introduction to dentistry and dental assisting.

<b>CTE Standards and Benchmarks</b>	
28.0	Use dental terminology. - The student will be able to:
28.01	Identify and define common dental terms.
28.02	Demonstrate the use of proper dental terminology in the dental environment.
29.0	Identify structures and explain functions and pathologies of dental and general head and neck anatomy. - The student will be able to:
29.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, nerves and blood vessels. Identify embryonic development of head, oral cavity, and teeth.
29.02	Identify teeth and their landmarks.
29.03	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
29.04	Recognize and describe oral pathological conditions.
30.0	Identify principles of microbiology and disease prevention and perform infection control procedures. - The student will be able to:
30.01	Differentiate between pathogenic and non-pathogenic microorganisms.
30.02	Describe pathogens and modes of disease transmission.
30.03	Differentiate between aseptic and non-aseptic environments.
30.04	Perform aseptic handwashing technique.
30.05	Describe and apply methods of cleaning, disinfection and sterilization.

## CTE Standards and Benchmarks

30.06	Identify chemicals and their uses for controlling the spread of disease in the dental environment.
30.07	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.
30.08	Describe the duties of the dental office safety coordinator.
30.09	Identify areas of the OSHA Blood borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.
31.0	Describe the legal and ethical responsibilities of the dental health care worker. - The student will be able to:
31.01	Define commonly used legal vocabulary relating to dentistry.
31.02	Describe legal and ethical consideration/obligations in the dental team-patient relationship.
31.03	Explain risk management.
31.04	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC applicable to practice by the dental health workers.
32.0	Identify, describe, and maintain dental instruments and equipment. - The student will be able to:
32.01	Identify various types, functions, and operations of dental operatory and laboratory equipment.
32.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
32.03	Maintain dental operatory equipment-and instruments.
32.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
33.0	Identify properties and uses of dental materials which include gypsum, restorative material, acrylics, dental cements, impression materials, and waxes. - The student will be able to:
33.01	Demonstrate an understanding of the composition of dental materials, their physical properties and chemical properties and the manner in which the properties relate to manipulation.
33.02	Describe the manipulative skills necessary to properly prepare dental materials for use both intraorally and extra orally.
33.03	Identify the primary objectives of the Council on Dental Materials and Devices of the American Dental Association.
33.04	Identify organizations responsible for establishing standards for dental materials.
33.05	Describe the physical conditions in the oral cavity which influence the selection of dental materials.
33.06	Describe the biological characteristics of dental materials which may limit their use in the oral cavity.
33.07	List factors which must be considered when selecting dental materials.



## CTE Standards and Benchmarks

33.08 Define terms related to dental materials and science.

34.0 Describe basic dental laboratory procedures. - The student will be able to:

34.01 Identify properties and manipulate gypsum.

34.02 Identify properties and manipulate impression materials.

34.03 Identify properties and manipulate extra orally used waxes.

34.04 Perform laboratory infection control.

35.0 Describe dental assisting duties. - The student will be able to:

35.01 Describe and demonstrate procedures used to evacuate and maintain the operating field.

35.02 Assemble instruments for general/and specialty dental procedures.

36.0 Identify specialty dental procedures. - The student will be able to:

36.01 Identify and describe oral maxillofacial surgery.

36.02 Identify and describe orthodontics.

36.03 Identify and describe periodontics.

36.04 Identify and describe prosthodontics.

36.05 Identify and describe pedodontics.

36.06 Identify and describe endodontics.

36.07 Identify and describe public health dentistry.

37.0 Identify dental business office procedures. - The student will be able to:

37.01 Describe appointment control.

37.02 Describe an active recall system.

37.03 Describe steps for maintaining accurate patient records.

37.04 Describe steps for maintaining patient financial records and collecting fees.

## CTE Standards and Benchmarks

37.05 Describe methods of dental office inventory control.

37.06 Describe public relations responsibilities of the secretary/receptionist.

37.07 Identify skills required for operating on office equipment.

37.08 Describe an optimal dental office environment.

## Additional Information

### **Laboratory Activities**

Laboratory investigations, including the use of scientific research, measurement, and laboratory technologies are an integral part of this course. These activities include instruction in the use of safety procedures, tools, equipment, materials, and processes related to these occupations. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at [sala@fldoe.org](mailto:sala@fldoe.org).

## **Special Notes**

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Laboratory Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417150
CIP Number	0317019902
Grade Level	9-12
Standard Length	4 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	51-9081 Dental Laboratory Technicians 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as dental laboratory technician apprentices or dental laboratory assistants (51-9081 Dental Laboratory Technicians) or to pursue further education in the dental health field. Simulation laboratory experiences are integrated with the didactic portion of this program. Students perform tasks representative of dental laboratory practice.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling four credits. The two credit Health Science Core (Health Science Anatomy & Physiology 841700 and Health Science Foundations 8417110) is required as a prerequisite for all programs and options. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417151	Dental Laboratory Assisting 3	DEN LABTEC 7G	1 credit	51-9081	2	
8417152	Dental Laboratory Assisting 4		1 credit	51-9081	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze the both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-32 encompass competencies specific to Dental Laboratory Assisting 3 & 4:**

- 28.0 Demonstrate communication and computational skills used in a dental laboratory.
- 29.0 Identify anatomic structure and function of body systems in relation to dental laboratory science.
- 30.0 Demonstrate computer literacy for dental labs.
- 31.0 Practice selected dental laboratory techniques.
- 32.0 Practice accepted principles of safety in the laboratory setting.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Dental Laboratory Assisting 3  
**Course Number:** 8417151  
**Course Credit:** 1

**Course Description:**

This course provides an introduction to dental laboratory techniques and procedures while preparing the student for entry-level employment as a dental laboratory assistant in a dental laboratory.

<b>CTE Standards and Benchmarks</b>	
28.0	Demonstrate communication and computational skills used in a dental laboratory. - The student will be able to:
28.01	Use appropriate dental terminology and abbreviations.
28.02	Demonstrate the ability to interpret dental laboratory prescriptions.
28.03	Demonstrate communication skills specific to the dental laboratory setting.
29.0	Identify anatomic structure and function of body systems in relation to dental laboratory science. - The student will be able to:
29.01	Describe the structure and function of head and neck anatomy.
29.02	Apply understanding of head and neck anatomy in relation to patient use of dental appliances.
30.0	Demonstrate computer literacy for dental lab. - The student will be able to:
30.01	Describe the uses of computers in the health occupation being studied.
30.02	Demonstrate computational, keyboarding and retrieval skills relevant to job requirements of the dental laboratory industry.
30.03	Demonstrate computer skills in each clinical rotation.
30.04	Describe the use of CAD/CAM technology in the dental laboratory.
31.0	Practice selected dental laboratory techniques. - The student will be able to:
31.01	Fabricate a variety of dental models from impressions using appropriate gypsum products and techniques,

## CTE Standards and Benchmarks

31.02 Fabricate selected provisional dental restorations.

31.03 Fabricate selected provisional dental prostheses.

31.04 Fabricate selected dental appliances such as athletic guards, night guards, and bleaching trays.

31.05 Fabricate custom impression trays and bite rims.

32.0 Practice accepted principles of safety in the dental laboratory setting. - The student will be able to:

32.01 Demonstrate safe use, care and maintenance of equipment and materials.

32.02 Properly identify and label models, prostheses, etc.

32.03 Recognize atypical behavior.

32.04 Follow emergency procedures for a dental laboratory.

32.05 Demonstrate knowledge of sterile technique and disease prevention in the dental lab.

32.06 Implement appropriate joint commission patient safety goals.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Dental Laboratory Assisting 4  
**Course Number:** 8417152  
**Course Credit:** 1

**Course Description:**

This course may be taken concurrently with Dental Laboratory Assisting 3. This course is a continuation of Dental Laboratory Assisting 3 and will allow the student to practice all aspects of Dental Laboratory Assisting.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

### **Special Notes**

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health HIV/AIDS Domestic Violence and Prevention of Medical Errors education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.



Florida Department of Education  
Curriculum Framework

**Program Title:** Electrocardiograph Aide  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417160
CIP Number	0351090202
Grade Level	9-12
Standard Length	2.5 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

The program is designed to prepare students for employment as EKG Aides (electrocardiograph aides) SOC 31-9099 (Healthcare Support Workers, all other).

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction totaling 2.5 credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G	1 credit	31-9099	3	EQ
8417110	Health Science Foundations	(See DOE approved list)	1 credit	31-9099	3	
8417161	Electrocardiograph Aide 3	LAB TECH @7 7G EKG 7G REG NURSE 7 G PARAMEDIC @7 7G MED ASST 7G TEC X RAY @7 7G RESP THER @7 7G MED PROF 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	.5 credit	31-9099	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-31 encompass competencies specific to EKG Aide:**

- 28.0 Describe the cardiovascular system.
- 29.0 Identify legal and ethical responsibilities of an EKG aide.
- 30.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 31.0 Perform patient care techniques in the health care facility.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:**        **Electrocardiograph Aide 3**  
**Course Number:**    **8417161**  
**Course Credit:**     **.5**

**Course Description:**

This course prepares students to be employed as Electrocardiograph aides. Content includes, but is not limited to, a foundation in the cardiovascular system, safety measures for the individual, co-workers and patients as well as training in the appropriate theories and instruments used by an Electrocardiograph Aide.

<b>CTE Standards and Benchmarks</b>	
28.0	Describe the cardiovascular system. -- The student will be able to:
28.01	Locate the heart and surrounding structures.
28.02	Diagram and label the parts of the heart and list the functions of each labeled part.
28.03	Trace the flow of blood through the cardiopulmonary system.
28.04	Identify and describe the electrical conduction system.
28.05	Describe the function of the autonomic nervous system.
28.06	Describe signs and symptoms of a patient demonstrating poor perfusion or low cardiac output and state the importance of rapid reporting.
29.0	Identify legal and ethical responsibilities of an EKG aide. -- The student will be able to:
29.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
29.02	Maintain a safe and efficient work environment.
29.03	Maintain EKG equipment so it will be safe and accurate.
29.04	Implement appropriate Joint Commission patient safety goals and adhere to HIPAA regulations regarding protected health information (PHI).
30.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. -- The student will be able to:
30.01	Calibrate and maintain EKG equipment in the work environment.

## CTE Standards and Benchmarks

30.02	Identify three types of lead systems (standard/limb, augmented, and precordial/chest).
30.03	State Einthoven's triangle.
30.04	Demonstrate proper lead placement including lead placement with special considerations for various patients with special needs to include pediatric, amputees, and posterior and right sided EKGs.
30.05	Identify artifacts and mechanical problems.
30.06	Perform a 3, 5, and 12 lead EKG.
30.07	Recognize normal sinus rhythm.
30.08	Report dysrhythmias that are not normal sinus rhythm.
30.09	Recognize sign and symptoms of cardiopulmonary compromise on the EKG tracing and understand the importance of rapid reporting.
30.10	Verify accuracy of lead placement on the EKG.
30.11	Verify settings on the EKG machine such as paper speed, sensitivity (gain), and Hertz (Hz) prior to use.
31.0	Perform patient care techniques in the health care facility. -- The student will be able to:
31.01	Describe the physical and mental preparation of the patient for EKG testing.
31.02	Identify patient and verify the requisition order.
31.03	Prepare patient for cardiovascular diagnostic testing.
31.04	State precautions required when performing diagnostic procedures.
31.05	Convey the importance of maintaining a safe patient environment and evaluate potential hazards in the work environment.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.



## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Emergency Medical Responder  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417170
CIP Number	0317020502
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 53-3011 Ambulance Drivers and Attendants, Except Emergency Medical Technicians

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

This instructional program prepares individuals to provide initial care to sick or injured persons or as ambulance drivers and attendants SOC 53-3011. An Emergency Medical Responder may use this training for employment. The Emergency Medical Responder is the first to arrive at the scene of an injury but does not have the primary responsibility for treating and transporting the injured person(s). Emergency Medical Responders may include law enforcement, lifeguard, fire services or basic life support non-licensed personnel who act as part of an organized emergency medical services team.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417171	Emergency Medical Responder 3	REG NURSE 7 G PARAMEDIC @7 7G MED PROF 7 G EMT 7G LAW ENF @7 7G CORR OFF 7G PUB SERV 7G FIRE FIGHT @7 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	1 credit	53-3011	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

**National Standards (NS)**

The student performance standards for Emergency Medical Responder were adapted and condensed from U. S. Department of Transportation Emergency Medical Services; National EMS Education Standards; Emergency Medical Responder Instructional Guidelines and American Society for Testing and Materials, Committee F-30. Administrators and instructors should refer to these materials for additional details.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-50 encompass competencies specific to Emergency Medical Responder 3:**

- 28.0 Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder.
- 29.0 Demonstrate an ability to communicate effectively as part of the EMS team.
- 30.0 Demonstrate an understanding of medicolegal aspects.
- 31.0 Determine and record vital signs of a sick or injured person.
- 32.0 Use medical identification devices.
- 33.0 Conduct a primary assessment of problems that are a threat to life if not corrected immediately.

- 34.0 Demonstrate BLS procedures
- 35.0 Recognize and control bleeding.
- 36.0 Recognize and control shock.
- 37.0 Understand the importance of emergency medications.
- 38.0 Demonstrate understanding of airway management, respiration and artificial ventilation.
- 39.0 Provide secondary assessment.
- 40.0 Identify musculoskeletal injuries.
- 41.0 Demonstrate proper spinal motion restriction of a Cervical/Spinal injury.
- 42.0 Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs).
- 43.0 Provide emergency evacuation and transfer of a sick and/or injured person.
- 44.0 Identify and provide initial care for a sick and/or injured patient.
- 45.0 Identify and care for patients who are in special situations.
- 46.0 Provide triage to victims of multiple casualty incidents.
- 47.0 Recognize life-threatening situations.
- 48.0 Recognize entrapment situations.
- 49.0 Assist with emergency childbirth.
- 50.0 Identify critical incident stressors.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two-credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.



**Florida Department of Education  
Student Performance Standards**

**Course Title:**        **Emergency Medical Responder 3**  
**Course Number:**    **8417171**  
**Course Credit:**     **1**

**Course Description:**

This course prepares students to be employed as Emergency Medical Responders. Content includes, but not limited to, identifying and practicing within the appropriate scope of practice for an Emergency Medical Responder, demonstrating correct medical procedures for various emergency situations, proficiency in the appropriate instruments used, as well as a foundation in the musculoskeletal system of the body.

<b>CTE Standards and Benchmarks</b>	
28.0	Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder. - The student will be able to:
28.01	Describe the role of Emergency Medical Responder as a member of the EMS team.
28.02	List and describe the responsibilities of the Emergency Medical Responder for the provision of pre-hospital emergency care within the local EMS system.
28.03	Describe principles of safely operating a ground ambulance.
28.04	Understand the guidelines of operating safety in and around a landing zone during air medical operations and transport.
28.05	Implement appropriate Joint Commission patient safety goals.
29.0	Demonstrate an ability to communicate effectively as part of the EMS team. - The student will be able to:
29.01	Demonstrate the proper procedure for the transfer of patient care to other EMS personnel.
29.02	Describe information regarding a patient's condition and treatment that need to be communicated.
29.03	Communicate the Emergency Medical Responder's observations and actions to whomever patient care is transferred.
29.04	Describe and apply the principles of communicating with patients in a manner that achieves a positive relationship.
29.05	Recognize simple medical prefixes, suffixes, combining vowels, and words.
30.0	Demonstrate an understanding of medicolegal aspects. - The student will be able to:
30.01	Describe and demonstrate an understanding of the medicolegal aspects of an Emergency Medical Responder's provision of emergency medical care in the jurisdiction having authority, including, but not limited to, duty to act, standard of care, consent to care, forcible restraint, abandonment, documentation and any applicable Good Samaritan Laws.
30.02	Practice within medicolegal standards.
31.0	Determine and record vital signs of a sick or injured person. - The student will be able to:
31.01	Determine and record skin color, temperature and moistness.
31.02	Demonstrate ability to accurately measure and record vital signs including manual blood pressure.
32.0	Use medical identification devices. - The student will be able to:

## CTE Standards and Benchmarks

32.01	Identify the most commonly used digital medical identification devices.
32.02	Apply the information contained on or in the medical identification devices to patient assessment and patient care procedures.
33.0	Conduct a primary assessment of problems that are a threat to life if not corrected immediately. - The student will be able to:
33.01	Determine and record the level of consciousness of the injured person including person, place, time, and events.
33.02	Assess for an inadequate airway, inadequate respiration's, inadequate circulation, and profuse bleeding.
33.03	Recognize when immediate correction is necessary.
33.04	Assess patient and determine if the patient has a life threatening condition.
33.05	Use spinal precautions as appropriate.
34.0	Demonstrate Basic Life Support (BLS) procedures. - The student will be able to:
34.01	Establish and maintain an open airway using both manual and mechanical airway techniques.
34.02	Restore breathing and circulation by means of cardiopulmonary resuscitation (CPR).
34.03	Demonstrate proficiency in the use of an automated external defibrillator (AED).
35.0	Recognize and control bleeding. - The student will be able to:
35.01	Identify items that can be used to control external bleeding and minimize the contamination of open wounds.
35.02	Apply pressure dressings, tourniquets, and wound packing that will control bleeding/hemorrhage and minimize the contamination of open wounds.
35.03	Identify the likelihood of internal bleeding through observations of signs, symptoms, and mechanisms of injury.
35.04	Care for a patient who exhibits the signs and symptoms of internal bleeding.
35.05	Apply current trauma treatment standards when applying a tourniquet, which may include Pre-Hospital Trauma Life Support (PHTLS) standards.
36.0	Recognize and control shock. - The student will be able to:
36.01	Recognize the likelihood that shock may occur or be present based on patient assessment and observation of a mechanism of injury.
36.02	Provide anti-shock measures as a part of routine patient care.
37.0	Understand the importance of emergency medications. - The student will be able to:
37.01	Understand the advantages, disadvantages, and techniques of self and peer administration of an intramuscular injection by auto injector.
37.02	Describe the names, effects, indications, routes of administration, and dosages for specific medications (I.E chemical antidote auto injector devices).
37.03	Demonstrate how to observe and respond to patient's need for narcotic antagonists.
37.04	Demonstrate accurate dosage calculation.
37.05	Demonstrate the six rights of administering narcotic antagonists.
37.06	Demonstrate how to administer narcotic antagonists.
37.07	Document administration of narcotic antagonists and patient's response on medical record.
37.08	Observe and communicate effects of medications to the patient's assigned EMT/Paramedic.
38.0	Demonstrate understanding of airway management, respiration, and artificial ventilation. - The student will be able to:
38.01	Apply knowledge of anatomy and physiology to airway management procedures (I.E. oxygenation and perfusion).
38.02	Understand the pathophysiology of respiratory dysfunction.
38.03	Use available mechanical devices to assure the maintenance of an open airway and assist ventilation according to American Heart

## CTE Standards and Benchmarks

Association (AHA) standards.

38.04 Demonstrate proficiency in supplemental oxygen therapy including portable oxygen cylinder and oxygen delivery devices.

38.05 Describe and demonstrate airway management utilizing upper airway suctioning.

39.0 Provide secondary assessment. - The student will be able to:

39.01 Conduct a methodical head-to-toe physical examination to discover conditions not found during the primary assessment.

39.02 Interview the sick or injured person to obtain facts relevant to the person's condition.

39.03 Interview co-workers, witnesses, family members, or other individuals to obtain facts relevant to the person's condition.

40.0 Identify musculoskeletal injuries. - The student will be able to:

40.01 Identify the various types of musculoskeletal injuries.

40.02 Immobilize and otherwise care for suspected fractures, dislocations, sprains, and strains with available supplies and equipment, including commercially available and improvised devices.

40.03 Demonstrate an understanding of the function and need for traction splints.

41.0 Demonstrate proper spinal motion restriction of a cervical/spinal injury. - The student will be able to:

41.01 Identify need for spinal motion restriction.

41.02 Maintain in-line spinal motion restriction of cervical spine.

41.03 Place proper fitting rigid extrication-type cervical collar.

41.04 Place patient in supine position on appropriate spine board based on patient condition.

41.05 Secure patient to spinal motion restriction device.

42.0 Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs). - The student will be able to:

42.01 Identify need for extremity immobilization.

42.02 Assesses motor, sensory, and distal circulation in extremities.

42.03 Place proper fitting splint on extremity.

42.04 Reassess motor, sensory, and distal circulation in extremities.

43.0 Provide emergency evacuation and transfer of a sick and/or injured person. - The student will be able to:

43.01 Describe situations when a person should be evacuated or transferred.

43.02 Use the most appropriate assist, drag or carry (alone or with a partner) to move a sick or injured person from a dangerous location to a safe place.

43.03 Maintain safety precautions during evacuation and transfer.

43.04 Demonstrate an understanding of the purpose and use of transfer methods for patients including stair, chairs, and stretchers.

44.0 Identify and provide initial care for a sick and/or injured patient. - The student will be able to:

44.01 Identify and care for patients with non-traumatic chest pain, utilizing patient assessment.

44.02 Identify and care for patients experiencing respiratory distress utilizing patient assessment.

44.03 Identify and care for patients experiencing a diabetic emergency utilizing patient assessment.

44.04 Identify and care for a patient who is experiencing a seizure utilizing patient assessment.

44.05 Identify and care for a patient who has ingested, inhaled, absorbed, or been injected with a poisonous substance.

44.06 Identify and care for a patient who is in an altered state of consciousness utilizing patient assessment.

44.07 Identify and care for a patient who is experiencing a stroke utilizing patient assessment.

44.08 Identify and care for a patient who has a foreign body in the eye utilizing patient assessment.

## CTE Standards and Benchmarks

44.09	Identify and care for a patient with thermal, chemical, or electrical burns, determining the severity including degree, body surface area, type, and location.
44.10	Identify and care for a patient suffering from an environmental emergency including heat cramps, heat exhaustion, heat stroke, and frostbite, utilizing patient assessment.
45.0	Identify and care for patients who are in special situations. - The student will be able to:
45.01	Identify patients who have special needs (including but not limited to abuse, domestic violence, and sex trafficking).
45.02	Care for injured/ill children.
45.03	Care for the injured/ill elderly.
45.04	Care for the injured/ill physically disabled.
45.05	Care for the injured/ill developmentally disabled.
46.0	Provide triage to victims of multiple casualty incidents. - The student will be able to:
46.01	Categorize the victims of multiple casualty incidents according to the severity of injury or illness based on patient assessments.
46.02	Use triage tags or other identification devices available locally to indicate priorities for pre-hospital emergency care and transportation to medical facilities.
46.03	Work as a member of a team to perform triage at locations of multiple casualty incidents.
46.04	Work as a member of a team to perform patient assessments at locations of multiple casualty incidents.
46.05	Work as a member of a team to carry out patient care procedures at the locations of multiple casualty incidents.
46.06	Demonstrate knowledge of the operating procedures during a terrorist event or during a natural or man-made disaster.
46.07	Demonstrate a basic understanding of the Incident Command System (ICS) implemented by the Federal Emergency Management Agency (FEMA).
46.08	Discuss and demonstrate Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 (q)(6)(i) –First Responder Awareness Level <a href="http://www.hazwopercertification.net/">http://www.hazwopercertification.net/</a>
47.0	Recognize life-threatening situations. - The student will be able to:
47.01	Take steps to minimize the chance of injury or death to all involved when confronted with a potentially life-threatening situation based on scene assessment.
48.0	Recognize entrapment situations. - The student will be able to:
48.01	Identify accident-related hazards and undertake hazard control measures consistent with the capabilities of the Emergency Medical Responder and available equipment.
48.02	Recognize available equipment that is used to safely gain access to persons who are entrapped.
48.03	Recognize available equipment that is used to safely disentangle persons from mechanisms of entrapment.
48.04	Identify which agencies to notify for assistance with entrapment situations.
49.0	Assist with emergency childbirth. - The student will be able to:
49.01	Evaluate a mother to determine whether delivery is imminent.
49.02	Assist with a normal delivery.
49.03	Care for the mother and baby.
49.04	Identify abnormal childbirth situations and care for the mother and baby within the Emergency Medical Responder's capabilities.
50.0	Identify critical incident stressors. - The student will be able to:
50.01	Identify stressors which may affect the performance of an Emergency Medical Responder.

## CTE Standards and Benchmarks

50.02 Identify stressors which may affect the behavior of a sick or injured person.

50.03 Carry out procedures to minimize critical incident stress.

50.04 Identify signs and symptoms of PTSD and the resources available for treatment.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

In order for students to take the NREMT003 Emergency Medical Responder exam the program must be approved by the National Registry for Emergency Medical Technicians. To receive approval from NREMT each program must be "authorized" by the Bureau of Emergency Medical Services (EMS) by completing the instructor qualifications form required by Bureau of EMS.

The Emergency Medical Responder instructor shall issue to each student documentation of successful course completion which shall include date of issuance, student's name, name of sponsoring agency (DOE), name of training agency, and instructor's printed name and signature, plus the wording "issued pursuant to section 401.435 F.S." The instructor must also maintain on file following course completion, a roster listing the names of students who successfully completed the course, the dates and location of the course, and the name of the instructor.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal; therefore, the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.



Florida Department of Education  
Curriculum Framework

**Program Title:** Home Health Aide  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417190
CIP Number	0317040401
Grade Level	9-12
Standard Length	2.5 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1011 Home Health Aides 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as home attendants or home health aides (SOC 31-1011).

The content includes, but is not limited to, instruction in those supportive services that are required to provide and maintain bodily and emotional comfort and to assist the patient toward independent living in a safe environment, as stated in Rules of the Department of Health and Rehabilitative Services, Division of Health, Chapter 10D-68 - Minimum Standards for Home Health Agencies. Clinical experiences, where the student may practice, demonstrate and perform the procedures associated with bedside client care, are an appropriate part of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction totaling 2.5 credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417191	Home Health Aide 3	REG NURSE 7 G LPN 7 G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	.5 credit	31-1011	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-39 encompass competencies specific to Home Health Aide 3:**

- 28.0 Use verbal and written communications specific to Home Health Aide.
- 29.0 Demonstrate legal and ethical responsibilities specific to Home Health Aide.
- 30.0 Perform physical comfort and safety functions specific to Home Health Aide.
- 31.0 Provide personal patient care.
- 32.0 Perform patient care procedures.

- 33.0 Apply principles of nutrition.
- 34.0 Provide care for geriatric patients.
- 35.0 Apply the principles of infection control specific to Home Health Aide.
- 36.0 Provide bio-psycho-social support.
- 37.0 Prioritize and perform functions following the patient care plan.
- 38.0 Assist with rehabilitative activities.
- 39.0 Perform home health-care services.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Home Health Aide 3  
**Course Number:** 8417191  
**Course Credit:** .5

**Course Description:**

This course prepares students to be employed as Home Health Aides, Content includes but is not limited to patient care and safety, geriatric patient care, nutrition principles, rehabilitation services as well as supervised management functions.

<b>CTE Standards and Benchmarks</b>	
28.0	Use verbal and written communications specific to home health aide. - The student will be able to:
28.01	Obtain specified data from patient and family.
28.02	Utilize verbal and written information to assist with the patient's care plan.
29.0	Demonstrate legal and ethical responsibilities specific to home health aide. - The student will be able to:
29.01	Demonstrate legal and ethical behavior within the role and scope of home health aide responsibilities.
29.02	Follow policies and procedures concerning care as directed by the employer affecting the health, safety, and well-being of patients in the home setting.
29.03	Recognize and report signs of abuse, physical verbal, and substance.
29.04	Follow legal guidelines in documentation.
29.05	Exhibit behavior supporting and promoting residents' rights.
29.06	Recognizes and follows scope of proactive and role limitations for a home health aide.
30.0	Perform physical comfort and safety functions specific to home health aide. - The student will be able to:
30.01	Maintain a clean and safe home environment for the patient.
30.02	Adjust bed and/or side-rails.
30.03	Transfer patient with mechanical lift using proper body mechanics and patient safety measures.

## CTE Standards and Benchmarks

30.04	Demonstrate proper turning and positioning according to care plan.
30.05	Implement fall prevention measures as directed, i.e. clutter free pathways, locked wheelchair, etc.
30.06	Apply supportive comfort devices as directed (e.g. footboard, over-bed cradle, alternating pressure mattress).
30.07	Demonstrate and assist patient to dangle.
30.08	Assist patient in ambulation, including the use of crutch, cane, or walker.
30.09	Demonstrate the proper wheel chair safety technique and assist the patient as needed with use.
30.10	Assist patient with care and use of prosthetic/orthotic devices.
30.11	Describe emergency evacuation procedures with adaptations to the home setting.
30.12	Implement appropriate regulatory and accrediting agency patient safety guidelines.
31.0	Provide personal patient care. - The student will be able to:
31.01	Perform bed bath; observe and report changes in a patient.
31.02	Perform back rub.
31.03	Demonstrate procedures for safety in the bathroom including the use of adaptive shower equipment such as shower chairs, long handled bath sponge, grab bars, extended shower hose, rubber mat in tub or shower, and rubber based rug outside the shower.
31.04	Assist with shower or tub bath, including use of specialty tubs.
31.05	Assist patient with sink, tub, shower, shower cap, or bed shampoo.
31.06	Demonstrate the use of a safety and/or electric razor to shave the patient.
31.07	Demonstrate how to groom patient, including hair, skin, foot, and nail care.
31.08	Assist with and/or administer oral hygiene, including denture care.
31.09	Assist patient with toileting, using various types of restorative and rehabilitative equipment.
31.10	Assist patient to dress.
31.11	Assist patient with meals.
32.0	Perform patient care procedures. - The student will be able to:



## CTE Standards and Benchmarks

32.01	Make unoccupied/occupied bed.
32.02	Provide passive range-of-motion exercises.
32.03	Apply anti-embolic hose and sequential compression devices.
32.04	Understand and demonstrate proper collection of urine, strained, timed urine, and/or routine urine specimen.
32.05	Observe skin while bathing for allergic reaction to catheter or any leaking.
32.06	Monitor fluid intake and output (I&O), including encouraging and restricting fluids.
32.07	Observe, record, and report patient's emesis.
32.08	Assist with ostomy care and alert nurse of any unusual observations while performing skin care.
32.09	Collect stool specimen and alert nurse of unusual odors, colors, or character.
32.10	Care for patients receiving oxygen therapy making sure patient receives correct flow of oxygen.
33.0	Apply principles of nutrition. - The student will be able to:
33.01	Identify nutrients and food groups.
33.02	Identify and implement regional, cultural, and religious food guidelines/preferences.
33.03	Describe special diets.
33.04	List factors that must be considered when purchasing food.
33.05	Follow the prescribed basic food plan.
33.06	List factors that must be considered when storing food.
33.07	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
33.08	Identify methods of food preparation.
33.09	Discuss preparation and serving of trays in the home.
34.0	Provide care for geriatric patients. - The student will be able to:
34.01	Identify safety principles as related to the elderly.

## CTE Standards and Benchmarks

34.02	Describe general characteristics, particular needs, and problems of the elderly.
34.03	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
34.04	Distinguish between fact and fallacy about the aging process.
34.05	Identify community resources and services available to the elderly and their caregiver.
34.06	Apply reality orientation techniques and validation therapy.
34.07	Provide and involve patients in diversional activities.
34.08	Identify common alterations in elderly patient behavior or health status and follow up within the home health aide scope of performance.
34.09	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).
35.0	Apply the principles of infection control specific to home health aide. - The student will be able to:
35.01	Provide care for patients with infectious diseases in the home.
35.02	Follow isolation procedures with food tray, personal protective equipment (PPE), supplies/equipment, and other materials in the home.
35.03	Utilize standard precautions in all home care.
35.04	Discuss transmission-based precautions.
36.0	Provide bio-psycho-social support. - The student will be able to:
36.01	Discuss family roles and their significance to health.
36.02	Respond to patient and family emotional needs.
37.0	Prioritize and perform functions following the patient care plan. – The student will be able to:
37.01	Organize patient-care assignments.
37.02	Complete assignments accurately and in a timely manner per care plan.
38.0	Assist with rehabilitative activities. - The student will be able to:
38.01	List the purposes of restorative (rehabilitation) programs.
38.02	Assist patient with specified restorative (rehabilitation) needs.

## CTE Standards and Benchmarks

38.03 Assist patients/residents to reach the optimum level of independence.

39.0 Perform home health-care services. - The student will be able to:

39.01 Establish and follow a collaborative care plan with patient and family.

39.02 Perform patient-related cleaning tasks and laundry per care plan.

39.03 Identify methods for medication storage.

39.04 Assist patient with taking self-administered prescribed medication in the home, and identify possible side effects and emergency procedures for adverse reactions in accordance with F.A.C. 59A-8.0095.

39.05 Demonstrate how to utilize equipment and supplies in the home.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**Please refer to 42CFR§484.36 for the clinical requirements for the Home Health Aide program.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

Section 59A-8.0095 Home Health Aide, Administrative Rules, Department of Health and Rehabilitative Services contain much valuable information for program planning. These rules require that if the Home Health Aide receives training through a vocational school where professional standards have been established in accordance with the State Board of Education, a certificate of successful completion shall be on file with the employer.

Students who have completed this program and the secondary program Nursing Assistant have met competencies for and may be known as Patient Care Assistants. This program may be taken simultaneously with Nursing Assistant.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Laboratory Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417200
CIP Number	0317030402
Grade Level	9-12
Standard Length	4 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2012 Medical and Clinical Laboratory Technicians 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

The program is designed to prepare students for employment as medical/clinical lab technicians, (or medical lab assistants 29-2099 - Health Technologists and Technicians, All Other)

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling four credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417201	Medical Laboratory Assisting 3	LAB TECH @7 7G	1 credit	29-2012	3	
8417202	Medical Laboratory Assisting 4		1 credit	29-2012	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-44 encompass Medical Laboratory Assisting:**

- 28.0 Demonstrate accepted professional, communication, and interpersonal skills.
- 29.0 Discuss phlebotomy in relation to the health care setting.
- 30.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
- 31.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 32.0 Demonstrate skills and knowledge necessary to perform phlebotomy.

- 33.0 Practice infection control following standard precautions.
- 34.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 35.0 Practice quality assurance and safety.
- 36.0 Identify the federal and state laws which serve to regulate the provision of laboratory services, including CLIA, Florida Statutes, and Florida Administrative Code.
- 37.0 Demonstrate a basic understanding of ICD and CPT coding Systems.
- 38.0 Demonstrate basic knowledge of microbiology.
- 39.0 Demonstrate basic knowledge of urinalysis.
- 40.0 Demonstrate basic knowledge of clinical chemistry.
- 41.0 Demonstrate basic knowledge of hematology.
- 42.0 Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).
- 43.0 Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.
- 44.0 Successfully complete learning experiences in the clinical setting.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

Florida Department of Education  
Student Performance Standards

Course Title: Medical Laboratory Assisting 3  
Course Number: 8417201  
Course Credit: 1

Course Description:

This one credit course is the third course of a four course Medical Lab Assistant program. **Live work is not recommended for this course.** Students completing this course have also met the postsecondary requirements of phlebotomy **except for clinical experiences with live work.**

CTE Standards and Benchmarks	
28.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
28.01	Demonstrate the appropriate professional behavior of a phlebotomist.
28.02	Explain to the patient the procedure to be used in specimen collection.
28.03	Explain in detail the importance of identifying patients correctly when drawing blood.
28.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
28.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
28.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
29.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
29.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.
29.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
29.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
30.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
30.01	Describe and define major body systems with emphasis on the circulatory system.

30.02	List and describe the main superficial veins used in performing venipuncture.
30.03	Locate the most appropriate sites(s) for capillary and venipuncture.
30.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
30.05	Compare and contrast between serum and plasma as it relates to blood collection.
30.06	Discuss hemostasis as it relates to blood collection.
31.0	Recognize and identify collection reagents supplies, equipment, and interfering chemical substances. – The student will be able to:
31.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
31.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
31.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.
31.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
31.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
31.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
31.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
32.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
32.01	Follow approved procedure for completing a laboratory requisition form.
32.02	Recognize a properly completed requisition.
32.03	Demonstrate knowledge of established protocol for patient and specimen identification.
32.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
32.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
32.06	Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.
32.07	Describe the correct order of draw.
32.08	Describe the use of barcoding systems used for specimen collection.
32.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.

32.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention, and treatment.
32.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
32.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
32.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
32.14	Demonstrate the proper procedure for collecting blood cultures.
32.15	Discuss the effects of hemolysis and methods of prevention.
32.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
33.0	Practice infection control following standard precautions. – The student will be able to:
33.01	Define the term hospital acquired infection.
33.02	Describe and practice procedures for infection prevention including hand washing skills.
33.03	Discuss transmission based precautions.
33.04	Identify potential routes of infection and their complications.
34.0	Practice accepted procedures of transporting, accessioning, and processing specimens. – The student will be able to:
34.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
34.02	Demonstrate knowledge of accessioning procedures.
34.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
34.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
35.0	Practice quality assurance and safety. – The student will be able to:
35.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
35.02	Practice appropriate patient safety.
35.03	Practice safety in accordance with OSHA (state & federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
35.04	Follow documentation procedures for work related accidents.
35.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Medical Laboratory Assisting 4  
**Course Number:** 8417202  
**Course Credit:** 1

**Course Description:**

This one credit course is the fourth course of a four course Medical Lab Assistant program. Students completing this course have also met the postsecondary requirements of Medical Lab Assisting **except for clinical experiences involving live work.**

**Abbreviations:**

FS-M/LA = Florida Standards for Math/Language Arts  
 NGSSS-Sci = Next Generation Sunshine State Standards for Science

<b>CTE Standards and Benchmarks</b>	
36.0	Identify the federal and state laws which serve to regulate the provision of laboratory services, including CLIA, Florida Statutes, and Florida Administrative Code. – The student will be able to:
36.01	Explain the CLIA test complexity model and describe the characteristics required for FDA classification of a test as waived.
36.02	Explain the categories of testing personnel established by both CLIA and Florida regulations and describe the basic educational and/or experiential qualifications for each category.
36.03	Explain the differences in requirements for a physician practice laboratory, a hospital laboratory and an independent clinical laboratory.
36.04	Describe Alternate Site Testing requirements as they apply to hospitals in Florida and compare and contrast these with the requirements for CLIA waived testing and Provider Performed Microscopy. Apply the concepts of Point-of-Care or Near Patient testing to these requirements.
36.05	Demonstrate an understanding of the concepts of “scope of practice”, “professional judgment”, and “duty/obligation to report”.
37.0	Demonstrate a basic understanding of ICD and CPT coding Systems. – The student will be able to:
37.01	Explain the characteristics of the International Classification of Disease System (ICD), and its important function in substantiating the clinical record.
37.02	Explain the characteristics of Healthcare Common Procedure Coding System (HCPCS), including the two primary levels of codes, and its function in reporting medical procedures including laboratory testing.
37.03	Explain the differences between analyte, method, and unlisted procedure CPT codes and the hierarchy for selecting CPT codes for reporting laboratory tests.
37.04	Describe the concept of medical necessity as set forth in National or Local coverage Decisions (NCD and LCD) for lab testing under the Medicare Program.



## CTE Standards and Benchmarks

37.05 Review the concept of congressionally mandated screening tests under the Medicare Program.

38.0 Demonstrate basic knowledge of microbiology. -- The student will be able to:

38.01 Perform techniques of microbiology related to disinfection techniques.

38.02 Discuss techniques of microbiology related to isolation techniques.

38.03 Perform techniques of microbiology related to sterilization techniques.

38.04 Perform techniques of microbiology related to slide preparation.

38.05 Describe the basic operation and principles related to usage of microscopes.

38.06 Understand the staining and microscopic examination of gram stains.

38.07 Discuss techniques of microbiology related to primary inoculation media, specimen types, and transfer of cultures.

38.08 Perform basic techniques of microbiology in respect to routine and emergency specimen collection including time constraints.

38.09 Discuss classification, composition and preparation of culture media.

39.0 Demonstrate basic knowledge of urinalysis. – The student will be able to:

39.01 Understand urinalysis techniques related to normal and abnormal components of the urine.

39.02 Perform urinalysis techniques related to collection and preservation of specimens and time constraints.

39.03 Perform urinalysis techniques related to physical properties of urine

39.04 Perform urinalysis techniques related to dipstick urine pH and describe clinical significance.

39.05 Discuss urinalysis techniques related to urine specific gravity techniques.

39.06 Perform dipstick or tablet (non-automated) urinalysis techniques related to performance of chemical tests.

39.07 Discuss urinalysis techniques related to microscopic identification of significant elements.

39.08 Perform urinalysis techniques related to principles and use of centrifuge.

40.0 Demonstrate basic knowledge of clinical chemistry. – The student will be able to:

40.01 Perform techniques of clinical chemistry related to metric measurement.

## CTE Standards and Benchmarks

40.02 Perform techniques of clinical chemistry related to labware and clinical equipment.

40.03 Perform techniques of clinical chemistry related to reagent preparation, laboratory equipment and laboratory techniques.

40.04 Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.

40.05 Discuss the importance of quality assurance as it relates to patient results.

40.06 Discuss techniques of clinical chemistry related to visual colorimetry, calibration and use of the spectrophotometer.

40.07 Demonstrate an understanding of the relationship between common clinical chemical tests and specific body systems and disorders.

41.0 Demonstrate basic knowledge of hematology. -- The student will be able to:

41.01 Discuss techniques of hematology related to counting formed elements of blood.

41.02 Perform techniques of hematology related to preparation and staining.

41.03 Discuss techniques of cell differential microscopic examination of blood films.

41.04 Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.

41.05 Perform techniques of hematology related to spun hematocrit tests.

41.06 Discuss techniques of hematology related to the use of platelet function analyzing instruments in addition to performing bleeding times.

41.07 Perform techniques of hematology related to hemoglobin tests.

41.08 Understand the use of and importance of red blood cell indices.

41.09 Discuss basic techniques of hematology related to normal and abnormal physiology.

42.0 Demonstrate basic knowledge of and perform clinical laboratory point of care (POC) testing (Waived). -- The student will be able to:

## CTE Standards and Benchmarks

42.01 Demonstrate the ability to interpret instructions of point of care testing including, but not limited to the following:

- 42.01.01 Test principle
- 42.01.02 Storage & stability
- 42.01.03 Internal vs. external quality control
- 42.01.04 Specimen collection & preparation
- 42.01.05 Directions for use
- 42.01.06 Interpretation of results
- 42.01.07 Interfering substances

42.02 Explain the purpose of performing lot to lot correlations.

42.03 Demonstrate knowledge of the frequency in which quality control procedures should be performed.

42.04 Understand the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.

43.0 Demonstrate basic knowledge of and perform point of care (POC) testing using CLIA approved Waived instrumentation. -- The student will be able to:

43.01 Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.

43.02 Perform instrument maintenance.

43.03 Demonstrate knowledge of quality control and calibrations involved within the POC instruments.

43.04 Identify normal limits and associate abnormal results with disease or disorders.

43.05 Discuss the significance of reporting critical values as it applies to Point of Care testing.

44.0 Successfully complete learning experiences in the clinical setting. – The student will be able to:

44.01 Observe and participate as appropriate the skills outlined in outcomes for medical lab assisting.

44.02 Complete clinical rotations.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Simulation and clinical laboratory experiences are integrated with the didactic portion of this program. Clinical experience is defined as laboratory activities performed in the clinical setting under the supervision of a medical laboratory technician or technologist.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

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Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student. A

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health HIV/AIDS Domestic Violence and Prevention of Medical Errors education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students completing the course Medical Laboratory Assisting 3 have also met the postsecondary requirements of phlebotomy except for clinical experiences involving venipuncture on actual patients.

Students completing the course Medical Laboratory Assisting 4 have also met the postsecondary requirements of Medical Lab Assisting except for some clinical experiences involving live work.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**       Nursing Assistant (Acute and Long Term Care)  
**Program Type:**       Career Preparatory  
**Career Cluster:**      Health Science

**Secondary – Career Preparatory**

Program Number	8417210
CIP Number	0317060201
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1014 Nursing Assistants 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This course is designed to prepare students for employment as nursing assistants SOC- 31-1014 (Nursing Assistants) in nursing homes, hospitals, or other health care facilities.

The content includes, but is not limited to, interpersonal skills, medical terminology, legal and ethical responsibilities, safe and efficient work, gerontology, nutrition, pet-facilitated therapy, health and safety including Cardio-pulmonary Resuscitation (CPR) – heart saver level, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417211	Nursing Assistant 3	REG NURSE 7 G LPN 7 G* PRAC NURSE @7 %7%G (Must be a Registered Nurse)	1 credit	31-1014	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

**\* The LPN 7 G district issued certification is a practical nurse. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator which must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.**



## **Regulated Programs**

### **This program is regulated by the Florida Board of Nursing.**

Successful completion of this program from an approved school prepares the student for certification for employment as a Nursing Assistant, in accordance with Chapter 464.203, Florida Statutes. To be approved, this program must be supervised by a registered nurse and follow the faculty qualifications set forth in 64B9-15.005 (3) (a) F.A.C.

New programs must be approved by the Board of Nursing, Department of Health prior to enrolling students.

Those students who satisfactorily complete an approved course are eligible to apply to take the national nursing assistant examination being utilized in Florida, in accordance with Chapter 464.203, F.S. This program includes both Acute and Long Term Care.

In accordance with 64B9-15.005 F.A.C., students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15.

In accordance with 64B9-15.006 F.A.C., clinical and simulated laboratory learning experiences must correlate with 80 hours of didactic instruction. In addition, a minimum of 40 hours' clinical experiences must be obtained. Simulated labs are not a substitute for all clinical experience. The clinical instruction shall include at least 20 hours of long term care clinical instruction in a licensed nursing home or licensed long term care facility. Simulated labs are allowed to be used for no more than 20 hours of clinical instruction.

In addition, students must have a minimum of 16 hours of training in communication and interpersonal skills, infection control, safety/emergency procedures, promoting residents' independence, and respecting residents' rights prior to any direct contact with a resident.

According to Section 400.211, F.S., persons who are enrolled in, or have completed, a state approved nursing assistant training program may be employed by a licensed nursing facility for a period of four months. However, the certification requirements must be met within four months of such initial employment.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-39 encompass competencies specific to Nursing Assistant:**

- 28.0 Use verbal and written communications specific to nurse assisting.
- 29.0 Demonstrate legal and ethical responsibilities specific to nurse assisting.
- 30.0 Perform physical comfort and safety functions specific to nurse assisting.
- 31.0 Provide personal patient care.
- 32.0 Perform patient care procedures.

- 33.0 Apply principles of nutrition.
- 34.0 Provide care for geriatric patients.
- 35.0 Apply the principles of infection control specific to nursing assisting.
- 36.0 Provide biological, psychological, and social support.
- 37.0 Perform supervised organizational functions, following the patient care plan.
- 38.0 Assist with restorative (rehabilitative) activities.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:**        **Nursing Assistant 3**  
**Course Number:**    **8417211**  
**Course Credit:**     **1**

**Course Description:**

This is a course designed to prepare the student to provide/assist with all aspects of activities of daily living for the adult patient in both hospital and nursing home settings. The course, which is taught by a registered nurse, includes didactic instruction, skills practice in the laboratory and clinical experience. Emphasis is also placed on the development of communication, interpersonal, problem solving and critical thinking skills.

Upon successful completion, the student is eligible to apply to sit for the Florida State Certified Nursing Assistant exam which qualifies as industry certification.

<b>CTE Standards and Benchmarks</b>	
28.0	Use verbal and written communications specific to nurse assisting. - The student will be able to:
28.01	Obtain specified data from patient and family.
28.02	Utilize verbal and written information to assist with the patient's plan of care.
28.03	Demonstrate use of the communication system.
29.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. - The student will be able to:
29.01	Demonstrate legal and ethical behavior within the role and scope of nursing assistant responsibilities.
29.02	Describe the purpose of the chain of communication (i.e., to resolve patient or employee problems).
29.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
29.04	Recognize and report signs of substance abuse.
29.05	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
29.06	Follow legal guidelines in documentation.
29.07	Demonstrate methods regarding risk management including prevention and quality of care.

## CTE Standards and Benchmarks

29.08	Exhibit behavior supporting and promoting patients' and/or residents' rights.
29.09	Recognize that a C.N.A. must self-report any crimes they've been involved in within 30 days of the offense in accordance with (FS 456.0727(1) w).
29.10	Discuss Florida certified nursing assistant rules including role limitations.
29.11	Recognize potential for and prevention of medical errors.
29.12	Discuss proper procedures to follow regarding medical errors.
30.0	Perform physical comfort and safety functions specific to nurse assisting. - The student will be able to:
30.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
30.02	Maintain safe patient units, equipment, and a comfortable environment.
30.03	Maintain service areas on the units including supplies and equipment.
30.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
30.05	Demonstrate adjustment of bed and side-rails according to facility policy.
30.06	Demonstrate and assist patient to dangle.
30.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
30.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
30.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
30.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
30.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
30.12	Assist patient with care and use of prosthetic/orthotic devices.
30.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
31.0	Provide personal patient care. - The student will be able to:
31.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.
31.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.

## CTE Standards and Benchmarks

31.03 Administer back rub with bath and as needed.

31.04 Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.

31.05 Demonstrate the use of a safety and/or electric razor to shave the patient.

31.06 Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.

31.07 Assist with and/or administer oral hygiene including denture care.

31.08 Assist patient to dress.

31.09 Assist patient with toileting using various types of restorative and rehabilitative equipment.

31.10 Assist patient with use of bedpan (standard and fracture)

31.11 Assist with bowel and bladder training.

31.12 Assist and/ or provide perineal care.

31.13 Empty, measure and record urinary output and/or drainage.

31.14 Demonstrate application and use of a leg bag, leg strap and dignity bag.

31.15 Monitor and assist with the drainage of urostomy bags and colostomy bags.

31.16 Assist patient with both donning and doffing prosthesis and brace.

31.17 Assist patient with meals.

31.18 Describe the relationships of body systems when providing patient care.

31.19 Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.

32.0 Perform patient care procedures. - The student will be able to:

32.01 Demonstrate ability to accurately measure, record and report vital signs.

32.02 Assist with the admission of a patient and/or resident.

32.03 Assist with the admission, transfer, and discharge of a patient and/or resident.

32.04 Maintain patient-belongings list.



## CTE Standards and Benchmarks

32.05 Make unoccupied/occupied bed.

32.06 Provide passive range-of-motion exercises.

32.07 Apply anti-embolic hose and sequential compression devices.

32.08 Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.

32.09 Record fluid intake and output (I&O).

32.10 Observe, record, and report patient's emesis.

32.11 Monitor and provide urinary catheter care and drainage systems.

32.12 Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.

32.13 Collect stool specimen.

32.14 Assist with the collection of a sputum specimen.

32.15 Assist the nurse with care of the patient with complex medical needs.

32.16 Assist patient to apply binders.

32.17 Care for patient in skin and skeletal traction.

32.18 Assist with pre-operative and post-operative patient care.

32.19 Reinforce dressings under the supervision of the RN/LPN.

32.20 Obtain and record an apical pulse.

32.21 Provide cast care and/or pin care.

32.22 Provide care for eyeglasses, artificial eyes, and contact lens.

33.0 Apply principles of nutrition. - The student will be able to:

33.01 Identify nutrients and food groups.

33.02 Develop a basic food plan.

33.03 Describe special diets.

## CTE Standards and Benchmarks

33.04 Check patient's diet tray for accuracy.

33.05 Monitor and document Nutritional Intake.

33.06 Identify and implement regional, cultural and religious food guidelines/preferences.

33.07 Demonstrate knowledge of the need for thickened liquids and fluid consistency.

33.08 Identify methods of maintaining fluid balance including encouraging and restricting fluids.

34.0 Provide care for geriatric patients. - The student will be able to:

34.01 Identify and assist with methods and procedures to prevent pressure ulcers.

34.02 Identify and assist with methods to prevent falls in the elderly.

34.03 Identify and assist with safety principles as related to the elderly.

34.04 Describe general characteristics, particular needs, and age related changes of the elderly.

34.05 Identify attitudes and living habits that promote positive mental and physical health for the elderly.

34.06 Distinguish between fact and fallacy about the aging process.

34.07 Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.

34.08 Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.

34.09 Provide and involve patients in diversional activities.

34.10 Identify common alterations in elderly patient behavior.

34.11 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).

34.12 Demonstrate awareness of common behaviors in drug use and abuse in the elderly.

34.13 Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.

34.14 Identify the need for community resources and services available to the elderly and their caregiver.

34.15 Identify components of the grief process.

34.16 Demonstrate an understanding of end of life care, hospice and palliative care.

## CTE Standards and Benchmarks

35.0 Apply the principles of infection control specific to nursing assisting. - The student will be able to:

35.01 Discuss transmission-based precautions.

35.02 Identify the chain of infection.

35.03 Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.

35.04 Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.

35.05 Follow isolation procedure with food tray, PPE, and other supplies/equipment.

35.06 Collect specimen from patient in isolation.

36.0 Provide biological, psychological, and social support. - The student will be able to:

36.01 Discuss family roles and their significance to health.

36.02 Respond to patient and family emotional needs.

37.0 Perform supervised organizational functions, following the patient care plan. – The student will be able to:

37.01 Organize and prioritize patient-care assignments.

37.02 Complete assignments accurately and in a timely manner.

38.0 Assist with restorative (rehabilitative) activities. - The student will be able to:

38.01 List the purposes of restorative (rehabilitation) program.

38.02 Assist patient with specified restorative (rehabilitation) needs.

38.03 Assist patients/residents to reach the optimum level of independence.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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### **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Students completing this program and the course Home Health Aide 3 have met the requirements for, and may be known as, Patient Care Assistants.

Following the completion of Health Science 1 and Health Science 2, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

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Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Vision Care Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417230
CIP Number	0317070202
Grade Level	9-12
Standard Length	4 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2081 Opticians, Dispensing 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as vision care assistants (Industry Title) at the aide level to assist opticians: dispensing and measuring, lens grinders, and other trained workers in the field of optics SOC 29-2081 (Opticians, Dispensing).

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling four credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs and options. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417231	Vision Care Assisting 3	TEC OPTICS 7G	1 credit	29-2081	3	
8417232	Vision Care Assisting 4		1 credit	29-2081	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-37 encompass competencies specific to Vision Care Assisting 3 & 4:**

- 28.0 Demonstrate knowledge of the visual system.
- 29.0 Gather patient history and all relevant data in preparation for a complete eye exam.
- 30.0 Prepare patients for and assist in testing for eye disorders.
- 31.0 Perform medical administrative office tasks.
- 32.0 Recognize patient needs in relation to lens characteristics.

- 33.0 Demonstrate knowledge of frame selection techniques used in a dispensing office setting.
- 34.0 Demonstrate knowledge of frame adjustment and alignment.
- 35.0 Demonstrate and perform basic skills relating to lenses.
- 36.0 Edge, tint and inspect a pair of glass or plastic lenses and insert into a frame.
- 37.0 Dispense optical supplies.

**Florida Department of Education  
Student Performance Standards**

**Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Vision Care Assisting 3  
**Course Number:** 8417231  
**Course Credit:** 1

**Course Description:**

This course is one of the two courses that prepare students to be Vision Care Assistants. Content includes, but is not limited to, care and maintenance of contact lenses and eyewear, basic skills pertaining to lens manufacturing, office support skills and patient safety.

<b>CTE Standards and Benchmarks</b>	
28.0	Demonstrate knowledge of the visual system. - The students will be able to:
28.01	Identify the anatomy of the eye.
28.02	Describe the physiology of each part of the eye.
28.03	Describe the visual pathway.
28.04	Define refractive errors.
28.05	Explain the most common conditions of the eye.
29.0	Gather patient history and all relevant data in preparation for a complete eye exam. - The students will be able to:
29.01	Record personal information and the patient's chief complaint.
29.02	Record the patient's medical and ocular history.
29.03	Record the family's medical and ocular history using proper medical abbreviations.
29.04	Identify preexisting conditions and medications affecting the eye.
29.05	Elicit information with respect to current pertinence for examination.
30.0	Prepare patients for and assist in testing for eye disorders. - The students will be able to:
30.01	Accurately take and record patient blood pressure, pulse, height and weight.

## CTE Standards and Benchmarks

30.02	Accurately screen and record patient visual acuity.
30.03	Accurately evaluate and record. 30.3.01 Dominant eye and hand. 30.3.02 Cover test for muscular imbalance. 30.3.03 Saccadic for erratic eye movements. 30.3.04 Near point of convergence. 30.3.05 Pursuits, rotations and versions.
30.04	Demonstrate knowledge of selected instruments used in determining specific eye disorders.
31.0	Perform medical administrative office tasks. - The students will be able to:
31.01	Schedule and confirm appointments.
31.02	Process all types of incoming and outgoing correspondence.
31.03	Organize office procedures from a management perspective. 31.3.01 Verification of insurance benefits. 31.3.02 Medical records management. 31.3.03 Insurance claims procedures.
31.04	Perform filing using a variety of methods.
31.05	Implement appropriate joint commission patient safety goals.
31.06	Manage frame boards.
32.0	Recognize patient needs in relation to lens characteristics. - The students will be able to:
32.01	Interpret the various symbols and abbreviations in a written eyeglass and contact lens prescription.
32.02	Distinguish lens criteria for myopic, hyperopic, astigmatic and presbyopic correction.
32.03	Identify the different designs of multifocal lenses to fit the patient's needs.
32.04	Calculate focal lengths from dipotric values.
32.05	Measure vertex distance and compensate for contact lens use.
32.06	Accurately measure a patient's needs with the use of a phoropter.
32.07	Define prism imbalance, vertical imbalance and full imbalance.

## CTE Standards and Benchmarks

32.08 Identify the effects of optical prism on lenses.

32.09 Describe the effects of types of tint on the eye.

32.010 Estimate the best transmission value related to light.

33.0 Demonstrate knowledge of frame selection techniques used in a dispensing office setting. - The students will be able to:

33.01 Distinguish between square, round, rectangular, oblong and oval features.

33.02 Compare features with large, long and small nasal attributes.

33.03 Contrast hair and skin tone.

33.04 Select a frame such that the horizontal and vertical fit the patient's needs.

33.05 Select a frame such that the material and color fit the patient's needs.

33.06 Select a frame considering lens thickness and material.

33.07 Select a frame considering temple length.

33.08 Identify and record frame measurements and markings.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Vision Care Assisting 4  
**Course Number:** 8417232  
**Course Credit:** 1

**Course Description:**

This course is the second of two courses that prepare students to be Vision Care Assistants. Content includes, but is not limited to, creation and completion of eyewear, frame selection techniques, frame adjustment and alignment, patient needs in relation to eyewear, compiling a patient case history as well as assisting in eye disorder testing.

<b>CTE Standards and Benchmarks</b>	
34.0	Demonstrate knowledge of frame adjustment and alignment--The students will be able to:
34.01	Identify frame parts and materials.
34.02	Demonstrate knowledge of frame measurement.
34.03	Demonstrate pupillary distance measurement.
34.04	Demonstrate frame selection considering customer and frame characteristics.
34.05	Select correct frame and bridge size.
34.06	Verify prescription information.
34.07	Perform frame adjustment and alignment.
34.08	Perform frame repairs.
34.09	Identify occupational eyewear and special purpose frames.
35.0	Demonstrate and perform basic skills relating to lenses--The students will be able to:
35.01	Use a manual lensometer.
35.02	Find the optical center of a sphere and a spherocylindrical lens in a manual lensometer.
35.03	Convert a lens according to the principals of toric transposition.

## CTE Standards and Benchmarks

35.04 Duplicate a pair of prescription eyeglasses.

35.05 Calculate lens size.

35.06 Calculate decentration.

35.07 Demonstrate knowledge of lens tinting.

35.08 Check finished product against ANSI standards.

36.0 Edge, tint and inspect a pair of glass or plastic lenses and insert into a frame—The students will be able to:

36.01 Spot the optical center on any given axis in a pair of single vision, bifocal, or progressive lenses.

36.02 Decenter and block any given lens avoiding unwanted prism.

36.03 Edge any single vision or multifocal lens to mount in a plastic, metal, semi-rimless and rimless frame.

36.04 Apply a safety bevel.

36.05 Tint and coat various lenses.

36.06 Insert lens into a frame.

36.07 Inspect completed spectacles to meet ANSI Standards.

37.0 Dispense optical supplies--The students will be able to:

37.01 Select frames according to prescription suitability, color, style and size.

37.02 Fill out Rx card completely and correctly.

37.03 Take proper patient measurements.

37.04 Dispense eyewear.

37.05 Adjust frames to patient's face using standard alignment.

37.06 Manage frame-boards.

37.07 Dispense contact lenses.

37.08 Describe types and care systems for contact lenses.



## CTE Standards and Benchmarks

37.09 Demonstrate insertion and removal techniques of contact lenses.

37.10 Use keratometer.

37.11 Demonstrate knowledge of frame repair.

38.0 Demonstrate knowledge of effective business management operation techniques. — The students will be able to:

38.01 Develop a small business plan of operation

38.02 Develop an office procedure manual

38.03 Demonstrate knowledge of finances, operating expenses, and inventory

38.04 Demonstrate knowledge of marketing and office set up

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Health Unit Coordinator  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8417280
CIP Number	0351070301
Grade Level	9-12
Standard Length	4 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	43-6013 Medical Secretaries 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as health unit clerks or health unit coordinators SOC 43-6013 (Medical Secretaries). Transcription of physicians' orders is an integral part of this course.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues, simulated practice with standard equipment and supplies used in a health care facility by the health unit coordinator. Clinical learning experiences are an integral part of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling four credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs and options. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G ( <u>See DOE approved list</u> )	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8417281	Health Unit Coordinator 1	REG NURSE 7 G MED RECTEC 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	1 credit	43-6013	2	
8417282	Health Unit Coordinator 2		1 credit	43-6013	2	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-39 encompass Health Unit Coordinator:**

- 28.0 Use oral and written communication skills in creating, expressing and interpreting information and ideas.
- 29.0 Describe the importance of professional ethics and legal responsibilities for the health unit coordinator.
- 30.0 Interpret and apply medical terminology specific to health unit clerks.
- 31.0 Organize and maintain efficient work practices.
- 32.0 Perform clerical duties.



- 33.0 Perform patient admission, transfer and discharge procedures.
- 34.0 Prepare discharge/transfer chart for medical records/new unit.
- 35.0 Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.
- 36.0 Read, interpret, process, coordinate and transcribe physicians' orders.
- 37.0 Demonstrate an understanding of the Health Unit Coordinators role in the nutritional care department.
- 38.0 Demonstrate an understanding of the Health Unit Coordinators role in processing diagnostic orders.
- 39.0 Explain the importance of employability skills and entrepreneurship skills for the health unit coordinator.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Health Unit Coordinator 1  
**Course Number:** 8417281  
**Course Credit:** 1

**Course Description:**

This course prepares students to be employed as Health Unit Coordinators/Health Unit Clerks. Content includes, but is not limited to, medical terminology, organization and efficiency in the workplace, computer operations, as well as aiding in physicians' orders.

<b>CTE Standards and Benchmarks</b>	
28.0	Use oral and written communication skills in creating, expressing, and interpreting information and ideas. -- The student will be able to:
28.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques when using the telephone and answering patient call lights.
28.02	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
28.03	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
28.04	Apply active listening skills to obtain and clarify information.
28.05	Exhibit public relations skills that aid in achieving customer satisfaction including face to face interactions.
28.06	Explain why implementation of the electronic medical record is requiring advanced communication skills for the health unit coordinator (HUC).
28.07	Give instances that exemplify human needs, classify each according to Maslow's hierarchy of human needs, and give appropriate responses to meet the listed needs.
28.08	Define and explain the importance of culturally sensitive care in the health care setting.
28.09	List five guidelines to follow that could improve intercultural communication.
29.0	Describe the importance of professional ethics and legal responsibilities for the health unit coordinator. – The student will be able to:
29.01	List seven patient rights as outlined in HIPAA.
29.02	Identify seven patient identifiers (individually identifiable health information [IIHI]).
29.03	Explain two purposes of the Health Information Technology for Economic and Clinical Health (HITECH) Act.

29.04	Explain the responsibilities the health unit coordinator (HUC) has for HIPAA compliance.
29.05	Evaluate alternative responses to workplace situations based on personal, professional, ethical, legal responsibilities, and employer policies.
30.0	Interpret and apply medical terminology specific to health unit clerks. – The student will be able to:
30.01	Identify components of medical terms.
30.02	Spell, pronounce and define medical terms, as related to health unit coordinator.
30.03	Relate medical terminology to the body systems.
30.04	Identify and define standard abbreviations and medical symbols.
30.05	Identify apothecary and metric systems.
31.0	Organize and maintain efficient work practices. -- The student will be able to:
31.01	Arrange daily activities by priority.
31.02	Prepare and post unit information lists.
31.03	Maintain a supply of assembled medical/surgical admission packets when using paper charts or standard forms.
31.04	Distribute forms and articles from in-basket.
31.05	Identify, store and maintain unit equipment/supplies in a neat and orderly manner.
31.06	Sanitize nursing station equipment.
31.07	Maintain par levels of supplies as required by the nursing unit.
31.08	Greet all visitors to the nursing unit and offer assistance as necessary.
32.0	Perform clerical duties. – The student will be able to:
32.01	Demonstrate knowledge of common software applications relevant to the role of the health unit coordinator.
32.02	Prepare, label, and add forms to chart.
32.03	Record non-clinical admission data on unit records.
32.04	Obtain previous admission records/X-rays.
32.05	Post all reports on charts.

32.06	File and retrieve assorted forms.
32.07	Maintain patient tracking for patients leaving the unit (electronic or paper log).
32.08	Conduct “downtime” procedure when electronic medical record program is unavailable due to scheduled downtime or unexpected downtime.
33.0	Perform patient admission, transfer, and discharge procedures. – The student will be able to:
33.01	List four types of admissions and three types of patients.
33.02	List the common components of a set of admission orders and common health unit coordinator (HUC) tasks regarding the patient’s admission when paper charts are used.
33.03	Describe how a surgical patient’s admission orders differ from a medical patient’s admission orders and discuss three options for the way in which patient surgeries are performed.
33.04	List the components that may be included in a set of pre/postoperative orders.
33.05	Explain why it is important for the HUC to monitor the patient’s electronic medical record (EMR) consistently.
33.06	Explain the purpose and the benefits of the electronic patient status tracking board for the patient’s family and/or friends.
33.07	Explain what the HUC’s responsibility would be regarding all medical records, including patient signed consent forms, handwritten progress notes, and reports faxed or sent from other facilities or brought in by a patient when the EMR with computer physician order entry (CPOE) is implemented.
34.0	Prepare discharge/transfer chart for medical records/new unit. – The student will be able to:
34.01	List the different types of discharges and explain the importance of communicating pending discharge information and bed availability to the admitting department or bed placement in a timely manner.
34.02	List the tasks that may be required to complete a routine discharge.
34.03	List the additional tasks that may be required when a patient is discharged to another facility, discharged home with assistance, or when a patient dies (postmortem).
34.04	Describe the tasks necessary to prepare the discharged patient’s medical record for the health information management services (HIMS) department when paper charts are used.
34.05	List the tasks that are performed when a patient is transferred from one unit to another.
34.06	List the tasks performed by the HUC when a patient is transferred from one room to another room on the same unit.
34.07	Discuss the importance of reading the entire set of discharge or transfer orders prior to the patient being discharged or transferred.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Health Unit Coordinator 2  
**Course Number:** 8417282  
**Course Credit:** 1

**Course Description:**

This course prepares students to be employed as Health Unit Coordinators/Health Unit Clerks. Content includes, but is not limited to, medical terminology, organization and efficiency in the workplace, computer operations, as well as aiding in Physicians' orders.

<b>CTE Standards and Benchmarks</b>	
35.0	Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
35.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
35.02	Participate in emergency or disaster plan, CPR, and first aid.
35.03	Identify the location of emergency equipment on the nursing unit.
35.04	Recognize and follow all appropriate emergent code protocols.
35.05	Comply with regulatory agency guidelines.
36.0	Read, interpret, process, coordinate and transcribe physicians' orders. – The student will be able to:
36.01	Identify all types of physician's orders.
36.02	Prioritize orders for transcription.
36.03	Prepare and route requisitions manually or via computer.
36.04	Arrange for ordered consultations.
36.05	Schedule patients' treatments or therapy with other hospital departments.
37.0	Demonstrate an understanding of the health unit coordinators role in the nutritional care department. – The student will be able to:
37.01	Explain the importance of communicating diet changes and patient food allergies to the nutritional care department.

37.02	List the groups of diets including nutritional supplements that may be ordered for the hospitalized patient.
37.03	List consistency changes that can be made to a standard diet and explain what is included in each.
37.04	List diet options that may be selected for the patient who has started on clear liquids and has an order for diet as tolerated and explain how the selection would be made.
37.05	Identify therapeutic diets that the patient's doctor may order.
37.06	Identify diets that may be requested by patients and assist them in ordering appropriate meals.
37.07	List the items an HUC may need to order when transcribing an order for tube feeding.
37.08	Explain the purpose of the doctors' orders force fluids, limit fluids, and calorie count.
37.09	Discuss the importance of sending all doctors' orders regarding a patient's diet or modifications to a patient's diet to the nutritional care department.
37.10	Discuss the importance of sending total parenteral nutrition (TPN) orders to the pharmacy in a timely manner via fax, pneumatic, or dumb waiter system.
38.0	Demonstrate an understanding of the health unit coordinators role in processing diagnostic orders. – The student will be able to:
38.01	List the major divisions of the clinical laboratory and their functions.
38.02	List six invasive procedures that would require a consent form signed by the patient.
38.03	Describe the health unit coordinator's responsibilities in ordering laboratory tests and sending specimens to the laboratory when EMR is used and when paper charts are used and describe how routine, stat, daily, and timed studies would be ordered and performed.
38.04	Explain how the health unit coordinator's responsibilities regarding diagnostic imaging orders differ with the implementation of the electronic medical record and computer physician order entry versus use of the paper chart.
38.05	List the required patient information needed when ordering procedures to be performed by the diagnostic imaging department.
38.06	Explain when a patient would be required to sign an informed consent before a diagnostic imaging procedure.
38.07	Discuss sequencing or scheduling of multiple diagnostic imaging procedures ordered for the same patient.
38.08	Demonstrate an understanding of other diagnostic studies.
39.0	Explain the importance of employability skills and entrepreneurship skills for the health unit coordinator. – The student will be able to:
39.01	Discuss benefits and responsibilities of the HUC as a member of a professional organization such as the National Association of Health Unit Coordinators.
39.02	List five benefits of becoming a certified HUC.
39.03	List three positions in which the HUC may be cross-trained.

39.04 Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.

39.05 Observe professional e-mail practices and etiquette.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Following the completion of Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

It is recommended that completers of this program take the National Association of Health Unit Coordinators Certification examination which is offered annually.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Pharmacy Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8418200
CIP Number	0317050705
Grade Level	9-12
Standard Length	7 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals, Skills USA
SOC Codes (all applicable)	29-2052 Pharmacy Technicians 31-9095 Pharmacy Aides

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as pharmacy technicians SOC 29-2052

The content includes but is not limited to metric system, medical terminology, medicinal drugs, pharmaceutical compounding, USP 795 standards, sterile techniques, USP 797 and UPS 800 standards, maintenance of inventory, IV preparation, receiving and handling of hazardous materials, preparing purchase orders, receiving and checking supplies purchased, printing labels, typing prescription labels, delivering medications, pricing prescription drug orders and supplies, prepackaging unit dose packages, patient record systems, control records, data processing automation in pharmacy, computer application, employability skills, leadership and human relations skills, health and safety, including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling seven credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8418210	Pharmacy Technician 1	PHARMACY 7 G	1 credit	31-9099	3	
8418220	Pharmacy Technician 2		1 credit	29-2052	3	
8418230	Pharmacy Technician 3		1 credit	29-2052	3	
8418240	Pharmacy Technician 4		1 credit	29-2052	3	
8418250	Pharmacy Technician 5		1 credit	29-2052	3	
8418260	Pharmacy Technician 6		1 credit	29-2052	3	
8418270	Pharmacy Technician 7		1 credit	29-2052	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## Regulated Programs

**This program is regulated by the Department of Health; Florida Board of Pharmacy.**

This program must be approved by the Board of Pharmacy. Program completers who wish to work as Pharmacy Technicians in the State of Florida must register with the Board of Pharmacy (465.014 F.S.).

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice human relations.
- 13.0 Identify pharmaceutical abbreviations and terminology as related to Community Pharmacy Practice.
- 14.0 Identify medical and legal considerations in various pharmacy settings.
- 15.0 Perform clerical duties as related to Pharmacy Practice.
- 16.0 Demonstrate knowledge of basic pharmaceutical chemistry and drug classification.
- 17.0 Demonstrate knowledge of inventory management.
- 18.0 Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice.
- 19.0 Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology.
- 20.0 Prepare and deliver medications.
- 21.0 Repackage unit dose medications.
- 22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Pharmacy Technician 1  
**Course Number:** 8418210  
**Course Credit:** 1

**Course Description:**

**Health Science Core:** The Health Science Core is a core of basic knowledge necessary for any health occupations career. This health core is encompassed inside of this course. Students who complete this course do not have to repeat the Health Science Core at any level. Students must have completed or be concurrently enrolled in the course to move on in this program.

Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

CTE Standards and Benchmarks	
01.0	Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the health care delivery system including public, private, government and non-profit.
01.02	Identify common methods of payment for healthcare services.
01.03	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.
01.04	Describe the composition and functions of a healthcare team.
01.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
01.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.07	Identify characteristics of effective teams.
01.08	Recognize methods for building positive team relationships.
01.09	Analyze attributes and attitudes of an effective leader.
01.10	Recognize factors and situations that may lead to conflict.



## CTE Standards and Benchmarks

01.11	Demonstrate effective techniques for managing team conflict.
01.12	Describe factors that influence the current delivery system of healthcare.
01.13	Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.
02.06	Use appropriate medical terminology and abbreviations.
02.07	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.08	Recognize the importance of patient/client educations regarding healthcare.
02.09	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.10	Analyze elements of communication using a sender-receiver model.
02.11	Distinguish between and report subjective and objective information.
02.12	Report relevant information in order of occurrence.
03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
03.01	Discuss the legal framework of the healthcare occupations including scope of practice legislation.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the “Patient’s Bill of Rights”.

## CTE Standards and Benchmarks

03.06	Identify standards of the Health insurance Portability and Accountability Act (HIPAA).
03.07	Describe advance directives.
03.08	Describe informed consent.
03.09	Explain the laws governing harassment, labor and employment.
03.10	Differentiate between legal and ethical issues in healthcare.
03.11	Describe a code of ethics consistent with the healthcare occupation.
03.12	Identify and compare personal, professional, and organizational ethics.
03.13	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice
03.14	Recognize and report illegal and/or unethical practices of healthcare workers.
03.15	Recognize and report abuse including domestic violence and neglect.
03.16	Distinguish among the five schedules of controlled substances.
04.0	Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:
04.01	Describe strategies for prevention of diseases including health screenings and examinations.
04.02	Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.
04.03	Identify psychological reactions to illness including defense mechanisms.
04.04	Identify complementary and alternative health practices.
04.05	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
04.06	Explain the basic concepts of positive self-image, wellness and stress.
04.07	Develop a wellness and stress control plan that can be used in personal and professional life.
04.08	Explore and utilize the U.S. Department of Agriculture’s MyPlate food guide.
04.09	Recognize the steps in the grief process.
05.0	Recognize and practice safety and security procedures. – The student will be able to:

## CTE Standards and Benchmarks

05.01	Recognize safe and unsafe working conditions and report safety hazards.
05.02	Demonstrate the safe use of medical equipment.
05.03	Explain and apply the theory of root- cause analysis
05.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
05.05	Identify and practice security procedures for medical supplies and equipment.
05.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.07	Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols and labels.
05.08	Demonstrate proper body mechanics and ergonomics.
05.09	Demonstrate the procedure for properly identifying patients.
05.10	Demonstrate procedures for the safe transport and transfer of patients.
05.11	Describe fire, safety, disaster and evacuations procedures.
05.12	Discuss The Joint Commissions patient safety goals.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Monitor and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.
06.04	Recognize adverse drug related emergencies and take appropriate first aid action.
07.0	Recognize and practice infection control procedures. – The student will be able to:
07.01	Define principles of infection control including standard and transmission based precautions.
07.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
07.03	Demonstrate knowledge of surgical asepsis.
07.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.

## CTE Standards and Benchmarks

08.0 Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:

08.01 Describe technology applications in healthcare.

08.02 Define terms and demonstrate basic computer skills.

08.03 Recognize technology applications in healthcare.

08.04 Interpret information from electronic medical documents.

08.05 Identify methods of communication to access and distribute data such as fax, e-mail and internet.

09.0 Demonstrate employability skills. – The student will be able to:

09.01 Identify personal traits or attitudes desirable in a member of the healthcare team.

09.02 Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).

09.03 Identify documents that may be required when applying for a job.

09.04 Write an appropriate resume.

09.05 Conduct a job search.

09.06 Complete a job application form correctly.

09.07 Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.

09.08 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.

09.09 Identify acceptable work habits.

09.10 Recognize appropriate affective/professional behavior.

09.11 Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).

10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:

10.01 Recognize emerging diseases and disorders

10.02 Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.

10.03 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.

## CTE Standards and Benchmarks

10.04	Identify "at risk" behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
10.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.
10.06	Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.
11.0	Apply basic math and science skills. – The student will be able to:
11.01	Draw, read, and report on graphs, charts and tables.
11.02	Measure time, temperature, distance, capacity, and mass/weight.
11.03	Make, use and convert using both traditional and metric units.
11.04	Make estimations and approximations and judge the reasonableness of the result.
11.05	Convert from regular to 24 hour time.
11.06	Demonstrate ability to evaluate and draw conclusions.
11.07	Organize and communicate the results obtained by observation and experimentation.
11.08	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
11.09	Calculate ratios.
12.0	Practice human relation skills. -- The student will be able to:
12.01	Explore the meaning and duties of a pharmacy technician.
12.02	Explore the organizational flow of responsibilities within a pharmacy setting.
12.03	Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04	Identify pharmacy organizations and their role in the profession to include student membership opportunities.
12.05	Identify the current trends and perspectives in the pharmacy practice.
12.06	Identify how team building can facilitate change within the pharmacy working environment.
12.07	Understand the importance of good interpersonal skills/soft skills in various pharmacy settings.
12.08	Demonstrate ethical conduct in job-related activities.

## CTE Standards and Benchmarks

12.09 Identify State of Florida requirements for obtaining and maintaining pharmacy technician registration as well as continuing education requirements for renewal.

12.10 Explore the importance of national certification and the continuing education requirements for renewal.

13.0 Identify pharmaceutical abbreviations and terminology as related to community pharmacy practice. -- The student will be able to:

13.01 Use pharmaceutical medical terminology.

13.02 Define the major symbols and abbreviations used on prescriptions and state the meaning.

13.03 Identify safety strategies used to prevent medication errors due to pharmaceutical abbreviations and terminology.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Pharmacy Technician 2  
**Course Number:** 8418220  
**Course Credit:** 1

**Course Description:** This course builds on the knowledge and skill obtained in Pharmacy Technician 1, while also exploring the medical and legal considerations in pharmaceutical careers. Students will learn integral administrative procedures required of pharmacy technicians while applying knowledge of basic pharmaceutical chemistry and drug classification.

**CTE Standards and Benchmarks**

14.0	Identify medical and legal considerations in various pharmacy setting. -- The student will be able to:
14.01	Articulate the significance of current national and Florida law and administrative rules as they relate to the scope of practice for the pharmacy technician.
14.02	Convey an understanding of patient counseling requirements pertaining to OBRA-90 versus MTM (Medication Therapy Management).
14.03	Convey an understanding of medical legal concepts as they relate to the scope of practice for the pharmacy technician.
14.04	Explain the legal requirements for accurate pharmacy documentation and recordkeeping.
14.05	Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.
14.06	Convey an understanding of the patient's Bill of Rights as it relates to pharmacy practice.
14.07	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.
14.09	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials, the utilization of safety data sheets, and hazardous communication symbols.
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.11	Understand and explain the legal requirements for final check by the pharmacist
14.12	Classify activities that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists.
14.13	Explain the importance of information technology (IT) and its current use in various pharmacy settings.

15.0	Perform clerical duties as related to Pharmacy Practice. -- The student will be able to:
15.01	Demonstrate retail pharmacy dispensing processes.
15.02	Identify potential errors that may result in Quality Related Events.
15.03	Utilize pharmacy software in processing pharmacy prescription data.
15.04	Identify and discuss applications of E-Prescribing and facsimile.
15.05	Utilize and apply interactive communication skills while gathering accurate information from patients and from other healthcare professionals
15.06	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements
15.07	Create, complete and maintain patient profiles including third party billing information.
15.08	Understand the processes of third party billing, resolving rejections, and obtaining prior authorizations.
15.09	Demonstrate professional telephone communication skills within the scope of practice for the pharmacy technician.
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.
15.11	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to various pharmacy practices.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification. -- The student will be able to:
16.01	Define the major classifications of pharmaceuticals.
16.02	Categorize at least one official compendia of standards for quality and purity of drugs and authoritative information on dosage, administration and therapeutic equivalents.
16.03	Utilize pharmacy reference manuals and web sites.
16.04	Apply knowledge of trade names, and generic name equivalents.



**Florida Department of Education  
Student Performance Standards**

**Course Title:** Pharmacy Technician 3  
**Course Number:** 8418230  
**Course Credit:** 1

**Course Description:** This course builds on the knowledge and skills obtained in Pharmacy Technician 1 and 2. This course focuses on the importance of quality control when handling controlled substances and essential compounding techniques.

<b>CTE Standards and Benchmarks</b>	
17.0	Demonstrate knowledge of inventory management. -- The student will be able to:
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.
17.02	Maintain controlled substance inventory.
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.
17.05	Create electronic purchase orders.
17.06	Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.
17.08	Convey an understanding of the inventory control process implemented by Title II of the Drug Quality and Security Act.
18.0	Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice. -- The student will be able to:
18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.
18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.
18.03	Perform common pharmaceutical calculations.
18.04	Identify common pharmaceutical weighing equipment.

18.05	Identify common pharmaceutical volume measurement equipment.
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.

**Course Title: Pharmacy Technician 4**

**Course Number: 8418240**

**Course Credit: 1**

**Course Description:** This course builds on the knowledge and skills obtained in Pharmacy Technician 1, 2 and 3. This course focuses on pharmaceutical chemistry and its relationship with human physiology. Students will explore vital theories to better ensure patient safety and satisfaction.

### CTE Standards and Benchmarks

19.0	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to the human physiology. -- The student will be able to:
19.01	Describe electrolyte balances and imbalances.
19.02	Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.
19.03	Demonstrate an understanding of common adult doses of medications, durations of common therapies, and respective contraindications, including the Beers Criteria.
19.04	Identify potential interactions that require a pharmacist's interventions pertaining to food/alcohol, herbal, OTC, and/or prescription medications.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Pharmacy Technician 5  
**Course Number:** 8418250  
**Course Credit:** 1

**Course Description:** This course builds on the knowledge and skills obtained in Pharmacy Technician 1, 2, 3 and 4.

Clinical (externship) opportunity in the retail setting will enhance student’s understanding of community pharmacy practice, association management, and the issues impacting the retail and chain drug industry. This externship is designed to develop both professional and clinical skills to ensure success in the pharmacy field.

Students are expected to participate in a clinical pharmacy experience that provides opportunities for each student to build on acquired knowledge and skills, to practice and develop skills in selected procedures. Such procedures include, but are not limited to, dispensing, compounding, inventory handling and control, drug distribution, processing of third party claims, maintenance of patient profiles and interaction and communication with pharmacy staff.

<b>CTE Standards and Benchmarks</b>	
20.0	Prepare and deliver medications. -- The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Demonstrate institutional pharmacy dispensing processes.
20.03	Compare all new orders with medications listed on profiles while noting any changes.
20.04	Utilize special precautions in the preparation of medications for pediatric patients.
20.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.06	Understand how to correctly fill and deliver medication cassettes.
20.07	Collect data from medication administration record.
20.08	Demonstrate use of automated medication dispensing equipment.

21.0	Repackage unit dose medications. -- The student will be able to:
21.01	Locate correct stock container.
21.02	Operate unit dose packaging equipment.
21.03	Measure, count, and place individual dose in appropriate containers.
21.04	Understand precautions used when packaging unit dose hazardous drugs.
21.05	Record repackaged medication data correctly.
21.06	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to repackaging unit dose medication.

**Course Title:** Pharmacy Technician 6  
**Course Number:** 8418260  
**Course Credit:** 1

**Course Description:** This course builds on the knowledge and skills obtained in Pharmacy Technician 1, 2, 3, 4 and 5. Students will learn how to properly prepare sterile products for patients by considering common medical errors and applying detailed knowledge of quality control techniques, drug incompatibilities and the storage and disposal of controlled substances.

<b>CTE Standards and Benchmarks</b>	
22.0	Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. -- The student will be able to:
22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.
22.02	Convey an understanding of United States Pharmacopeia (USP) 800 regulations.
22.03	Compare medication order with label on vial and check expiration date of product.
22.04	Calculate drug dosage for parenteral use.
22.05	Understand common institutional drug names, dosages, and incompatibilities.
22.06	Reconstitute parenteral medications.
22.07	Demonstrate aseptic technique to withdraw medication from stock vial, measure correct quantity as instructed, select and insert it into IV solution without error.

22.08	Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.
22.09	Prepare parenteral solutions using proper aseptic technique.
22.10	Understand the preparation of Total Parenteral Nutrition (TPN) solutions.
22.11	Understand the preparation of chemotherapeutic agents using proper safety techniques.
22.12	Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
22.13	Place label on IV solution container and record appropriately.
22.14	Perform quality control check of completed product.
22.15	Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.
22.16	Convey an understanding of the proper storage and disposal of hazardous Drugs.
22.17	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of sterile products.

**Course Title:** Pharmacy Technician 7  
**Course Number:** 8418270  
**Course Credit:** 1

**Course Description:** This course builds on the knowledge and skills obtained in Pharmacy Technician 1, 2, 3, 4, 5 and 6.

Clinical (externship) in the hospital setting will expand the student's knowledge of science and medicine as it relates to the professions associated with the practice of pharmacy in hospitals and family health centers. Students will interact with pharmacists and technicians and patients to provide services in all types of patient care settings including inpatient, outpatient and ambulatory care.

Students are expected to participate in a clinical pharmacy experience that provides opportunities for each student to build on acquired knowledge and skills, to practice and develop skills in selected procedures. Such procedures include, but are not limited to, dispensing, compounding, inventory handling and control, drug distribution, processing of third party claims, maintenance of patient profiles and interaction and communication with pharmacy staff.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical practicum experiences are an integral part of this program.

In addition, due to the clinical experiences students are engaged in through the program and to ensure the safety of both the students and the patients the recommended student to instructor ratio in the classroom is 20:1 and in the lab is 4:1.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

It is recommended that program completers take national pharmacy technician certification exam offered by the Pharmacy Technician Certification Board, 2215 Constitution Ave. NW, Washington, DC 20037-2985, (202)-429-7576. This certification is offered year round on a continual basis.

Outcomes 01-16 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Practical Nursing  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8418400
CIP Number	0351390102
Grade Level	9-12
Standard Length	9 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2061 Licensed Practical and Licensed Vocational Nurses 31-1014 Nursing Assistants

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes, but is not limited to, theoretical instruction and clinical experience in medical, surgical, obstetric, pediatric, and geriatric nursing; theoretical instruction and clinical experience in acute, care, long term care and community settings; theoretical instruction and clinical application of vocational role and function; personal, family and community health concepts; nutrition; human growth and development over the life span; body structure and function; interpersonal relationship skills, mental health concepts; pharmacology and administration of medications; legal aspects of practice; and current issues in nursing.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction totaling nine credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8418410	Practical Nursing Foundations 1A	REG NURSE 7 G LPN 7 G* PRAC NURSE @7 (Must be a Registered Nurse)	1 credit	31-1014	3	
8418420	Practical Nursing Foundations 1B		1 credit	31-1014	3	
8418430	Practical Nursing Foundations 2A	REG NURSE 7 G PRAC NURSE @7 (Must be a Registered Nurse)	1 credit	29-2061	3	
8418440	Practical Nursing Foundations 2B		1 credit	29-2061	3	
8418450	Medical Surgical Nursing 1A		1 credit	29-2061	3	
8418460	Medical Surgical Nursing 1B		1 credit	29-2061	3	
8418470	Medical Surgical Nursing 2A		1 credit	29-2061	3	
8418480	Medical Surgical Nursing 2B		1 credit	29-2061	3	
8418490	Comprehensive Nursing and Transitional Skills		1 credit	29-2061	3	

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)

**\* The LPN 7 G district issued certification is a practical nurse. This certification can only be utilized in the 8418410 and 8418420 courses when the program is an approved nursing assistant program with the Florida Board of Nursing to teach concepts, skills and experiences solely at the Certified Nursing Assistant level and scope. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator, which must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.**

## Regulated Programs

This program is regulated by the Florida Board of Nursing.

This program is designed to prepare students for employment as licensed practical nurses (SOC 29-2061). The program must be approved by the Florida State Board of Nursing in order for graduates to apply to take the examination to practice as a Licensed Practical Nurse.

**Please refer to Florida Statute 464.019 (1) (b) for faculty credential requirements to teach this program.**

Students are eligible to apply to take the national licensing examination after satisfactory completion of an approved program. Licensure Examination for Practical Nurses, CAT NCLEX-PN is a computer-administered examination that the nursing graduate must take and pass in order to practice as a Licensed Practical Nurse.

Clinical instruction of nursing students will meet the requirements of Florida Statute 464.019. Clinical experience must make up at least 50% of the total program. Simulated practice and clinical experiences are included as an integral part of this program. Clinical Simulation may be used for no more than 50% of the total clinical experience.

Program must comply with the State Board of Nursing rules, including faculty qualifications. For questions regarding this process, please contact: Board of Nursing, 4052 Bald Cypress Way, Tallahassee, FL 32399-3752.

An approved licensed practical nurse supervisory education course can only be taken following completion of this program, and after licensure. The Graduate must have 6 months' clinical experience before supervising as well as meeting all other criteria listed in 64B9-16.002.

A Licensed Practical Nurse working in a nursing home shall qualify to supervise by meeting all of the requirements in 64B9-16.002 (FS). The Supervisory course applicant must have no less than six months clinical nursing experience as an LPN. The supervisory course must be approved by the Board of Nursing, and must be a minimum of 30 hours in length.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Recognize and practice safety, security and emergency procedures.
- 03.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 04.0 Demonstrate computer literacy as related to nursing functions.
- 05.0 Use appropriate verbal and written communications in the performance of nursing functions.
- 06.0 Demonstrate legal and ethical responsibilities specific to the nursing profession.
- 07.0 Apply the principles of infection control, utilizing nursing principles.
- 08.0 Perform aseptic and sterile techniques.
- 09.0 Perform patient and personal care as it pertains to the practical nurse.
- 10.0 Provide patient-centered care for the geriatric population.
- 11.0 Assist with restorative (rehabilitative) activities.
- 12.0 Demonstrate organizational functions, following the patient plan of care.
- 13.0 Describe the structure and function of the human body in relation to health and disease.
- 14.0 Apply principles of nutrition as it relates to Practical Nursing scope of practice.
- 15.0 Describe human growth and development across the lifespan.
- 16.0 Demonstrate the performance of nursing procedures.
- 17.0 Demonstrate how to administer medication.
- 18.0 Demonstrate how to provide bio-psycho-social support.
- 19.0 Demonstrate healthy lifestyle responsibility specific to personal health maintenance.
- 20.0 Implement education and resources for family wellness.
- 21.0 Participate in Community Health Awareness Forums.
- 22.0 Demonstrate how to care for the surgical patient with a cardiovascular, respiratory, lymphatic, musculoskeletal, endocrine, or integumentary disease/disorder.
- 23.0 Demonstrate how to care for pre-operative and post-operative patients, utilizing nursing principles.
- 24.0 Demonstrate how to care for the surgical patient with a gastrointestinal, neurological, urinary, reproductive, or oncologic disease/disorder.
- 25.0 Demonstrate how to care for maternal/newborn patients, utilizing nursing principles.
- 26.0 Demonstrate knowledge of SIDS/ SUIDS as it relates to the practical nursing role.
- 27.0 Demonstrate how to care for pediatric patients, utilizing nursing principles.
- 28.0 Develop transitional skills.
- 29.0 Demonstrate employability skills specific to practical nursing.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Practical Nursing Foundations 1A  
**Course Number:** 8418410  
**Course Credit:** 1

**Course Description:**

The objectives in the course include knowledge of the health care system and professions, safety, security and emergency procedures, HIV/AIDS, computer literacy, basic communication skills, legal & ethical nursing concepts, principles of infection control and aseptic technique.

<b><u>Practical Nursing Foundations 1A</u></b>	
01.0	Demonstrate knowledge of the healthcare delivery system and health occupations. -The student will be able to:
01.01	Identify the basic components of the healthcare delivery system including public, private, government and non-profit.
01.02	Identify common methods of payment for healthcare services.
01.03	Describe the various types of healthcare providers and the range of services available.
01.04	Describe the composition and functions of a healthcare team.
01.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
01.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.07	Identify characteristics of effective teams.
01.08	Recognize methods for building positive team relationships.
01.09	Analyze attributes and attitudes of an effective leader.
01.10	Recognize factors and situations that may lead to conflict.
01.11	Demonstrate effective techniques for managing team conflict.
01.12	Describe factors that influence the current delivery system of healthcare.
01.13	Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.

## **Practical Nursing Foundations 1A**

02.0 Recognize and practice safety, security, and emergency procedures. - The student will be able to:

02.01 Recognize safe and unsafe working conditions and report safety hazards.

02.02 Demonstrate the safe use of medical equipment.

02.03 Explain and apply the theory of root- cause analysis.

02.04 Identify and describe methods in medical error reduction and prevention in the various healthcare settings.

02.05 Identify and practice security procedures for medical supplies and equipment.

02.06 Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.

02.07 Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.

02.08 Demonstrate proper body mechanics and ergonomics.

02.09 Demonstrate the procedure for properly identifying patients.

02.10 Demonstrate procedures for the safe transport and transfer of patients.

02.11 Describe fire, safety, disaster, active shooter, and evacuations procedures.

02.12 Discuss The Joint commission patient safety goals ([www.jointcommission.org](http://www.jointcommission.org)) and any other applicable accrediting/regulatory agency guidelines.

02.13 Describe legal parameters relating to the administration of emergency care.

02.14 Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.

03.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:

03.01 Recognize emerging diseases and disorders.

03.02 Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens.

03.03 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.

03.04 Identify “at risk” behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.

03.05 Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.

03.06 Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.

## **Practical Nursing Foundations 1A**

04.0 Demonstrate computer literacy as related to nursing functions. – The student will be able to:

04.01 Demonstrate effective use of technology, including use of electronic medical records and email relevant to job requirements for a Licensed Practical Nurse.

04.02 Identify computer skills utilized for each clinical rotation and apply, as appropriate.

04.03 Identify methods of communication to access and distribute data such as fax, e-mail and internet as related to HIPAA.

05.0 Use appropriate verbal and written communications in the performance of nursing functions. – The student will be able to:

05.01 Identify characteristics of successful and unsuccessful communication including communication styles and barriers.

05.02 Respond to verbal and non-verbal cues.

05.03 Use approved medical terminology and abbreviations.

05.04 Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.

05.05 Receive and give oral report using safe handoff of patient's status.

05.06 Report and record objective and subjective pertinent observations.

05.07 Maintain current documentation.

05.08 Document changes in patient behavior and mental awareness in a timely manner.

05.09 Obtain specified data from patient and family.

05.10 Define and explain the steps in the nursing process and the role of the licensed practical nurse in that process.

05.11 Utilize nursing principles to assist with the patient's plan of care.

06.0 Demonstrate legal and ethical responsibilities specific to the nursing profession. – The student will be able to:

06.01 Explain the "Patient's Bill of Rights".

06.02 Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).

06.03 Describe advance directives.

06.04 Describe informed consent.

06.05 Recognize and report all forms of abuse to include domestic violence (physical & verbal), neglect, and human trafficking.



## **Practical Nursing Foundations 1A**

06.06 Identify the components of the Nurse Practice Act.

06.07 Practice within the role and scope of the job description.

06.08 Discuss medical errors related to the practical nurse.

06.09 Define legal aspects and code of ethics related to nursing.

06.10 Describe the practical nurses' role in delegation of duties.

06.11 Follow policies and procedures affecting the health, safety, and well-being of patients.

06.12 Follow legal guidelines in charting, including use of electronic medical records.

07.0 Apply the principles of infection control, utilizing nursing principles. – The student will be able to:

07.01 Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.

07.02 Perform and promote effective hand hygiene.

07.03 Set up isolation unit using proper personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.

07.04 Follow isolation procedure with food tray, garments, and other materials.

07.05 Collect specimen from patient in isolation.

07.06 Identify common hospital acquired infections and their prevention and treatment.

07.07 Identify emergent communicable diseases and their prevention and treatment.

07.08 Apply interventions to break each chain of infection.

07.09 Discuss immunity and the role of immunizations.

07.10 Discuss nursing responsibilities related to biological exposures.

08.0 Perform aseptic and sterile techniques. – The student will be able to:

08.01 Apply principles of medical and surgical asepsis.

08.02 Apply and remove sterile gloves.

08.03 Apply sterile dressing.

## **Practical Nursing Foundations 1A**

08.04 Open sterile equipment and supplies.

08.05 Maintain sterile field.

08.06 Clean and disinfect equipment.

08.07 Apply and remove personal protective equipment (PPE).

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Practical Nursing Foundations 1B  
**Course Number:** 8418420  
**Course Credit:** 1

**Course Description:**

This course is a continuation of Practical Nursing Foundations 1A. The objectives in the course include basic nursing care procedures, geriatric care, restorative activities, organizational functions, structure and function of the body system across the lifespan and nutrition.

Laboratory and clinical experiences are an integral part of this course.

<b><u>Practical Nursing Foundations 1B</u></b>	
09.0	Perform patient and personal care as it pertains to the practical nurse. - The student will be able to:
09.01	Demonstrate ability to accurately measure, document, and report vital signs.
09.02	Lift, hold, and transfer patients including the use of the various assistive devices and equipment, utilizing proper body mechanics and patient safety measures.
09.03	Provide basic nursing care.
09.04	Perform patient hygiene care.
09.05	Assist patient with activities of Daily Living (ADL) including:
09.05.01	Dressing
09.05.02	Meals
09.05.03	Bowel and bladder training
09.05.04	Perineal/catheter care
09.05.05	Make unoccupied/occupied bed
09.05.06	Passive range of motion exercises
09.06	Assist patient with both donning and doffing prosthesis and brace.
09.07	Demonstrate care for eyeglasses, prosthetic eyes, and contact lens.
10.0	Provide patient-centered care for the geriatric population. - The student will be able to:

## **Practical Nursing Foundations 1B**

- |       |  |
|-------|--|
| 10.01 | Incorporate professional attitudes, values, and expectations about physical and mental aging in the provision of patient-centered care for older adults and their families.  |
| 10.02 | Identify barriers for older adults in receiving, understanding, and giving of information.   |
| 10.03 | Use valid and reliable assessment performed by registered nurse/LPN to guide nursing practice for older adults.  |
| 10.04 | Recognize safe living environments as it relates to functional, physical, cognitive, psychological, and social needs of older adults.  |
| 10.05 | Assist older adults and their support network to achieve personal goals, based on the analysis of the living environment and availability of community resources.  |
| 10.06 | Identify actual or potential mistreatment (physical, mental or financial abuse, and/or self-neglect) in older adults and report appropriately.   |
| 10.07 | Implement strategies and use online guidelines to prevent and/or identify and manage geriatric syndromes.  |
| 10.08 | Recognize and respect the variations of care, the increased complexity, and the increased use of healthcare resources inherent in caring for older adults.   |
| 10.09 | Recognize the complex interaction of acute and chronic co-morbid physical and mental conditions and associated treatments common to older adults.  |
| 10.10 | Discuss models of care that promote safe, quality physical and mental health care for older adults such as PACE, NICHE, Guided Care, Culture Change, and Transitional Care Models.   |
| 10.11 | Facilitate ethical, non-coercive decision making by older adults and/or families/caregivers for maintaining everyday living, receiving treatment, initiating advance directives, and implementing end-of-life care.  |
| 10.12 | Assist registered nurse to promote adherence to the evidence-based practice of providing restraint-free care (both physical and chemical restraints).  |
| 10.13 | Demonstrate leadership and communication techniques that foster discussion and reflection on the extent to which diversity (among nurses, nurse assistive personnel, therapists, physicians, and patients) has the potential to impact the care of older adults. |
| 10.14 | Facilitate safe and effective transitions across levels of care, including acute, community-based, and long-term care (e.g., home, assisted living, hospice, skilled nursing facility) for older adults and their families.                                      |
| 10.15 | Provide patient-centered care with consideration for mental and physical health and well-being of informal and formal caregivers of older adults. .  |
| 10.16 | Advocate for timely and appropriate palliative and hospice care for older adults with physical and cognitive impairments.  |
| 10.17 | Implement and monitor strategies to prevent risk and promote quality and safety (e.g., falls, medication mismanagement, pressure ulcers) in the nursing care of older adults with physical and cognitive needs.  |
| 10.18 | Utilize resources/programs to promote functional, physical, and mental wellness in older adults.   |
| 10.19 | Identify relevant theories and concepts related to the delivery of patient-centered care for older adults.   |
| 10.20 | Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis (Alzheimers or   |

## **Practical Nursing Foundations 1B**

Dementia).

10.21 Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.

10.22 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).

10.23 Demonstrate awareness of common behaviors in substance use and abuse in the elderly.

10.24 Report concerns to the nurse related to substance use and abuse in the elderly patient.

10.25 Identify components of the grief process as it relates the geriatric patient.

10.26 Identify factors predisposing aging adults for suicide.

11.0 Assist with restorative (rehabilitative) activities. – The student will be able to:

11.01 List the purposes of restorative (rehabilitation) program.

11.02 Assist patient with specified restorative (rehabilitation) needs.

11.03 Assist patients/residents to reach the optimum level of independence.

12.0 Demonstrate organizational functions following the patient plan of care. – The student will be able to:

12.01 Organize patient-care assignments.

12.02 Complete assignments accurately and in a timely manner.

13.0 Describe the structure and function of the human body in relation to health and disease. – The student will be able to:

13.01 Describe the relationships of body systems to health and disease as it relates to patient care.

13.02 Describe the structure and function of the respiratory system.

13.03 Describe the structure and function of the cardio-vascular system including lymph and immune response.

13.04 Describe the structure and function of the muscular-skeletal system.

13.05 Describe the structure and function of the nervous, skin, and sensory systems.

13.06 Describe the structure and function of the reproductive system.

13.07 Describe the structure and function of the urinary system.

## **Practical Nursing Foundations 1B**

13.08 Describe the structure and function of the digestive system.

13.09 Describe the structure and function of the endocrine system.

14.0 Apply principles of nutrition as it relates to practical nursing scope of practice. – The student will be able to:

14.01 Explore and utilize the U.S. Department of Agriculture's MyPlate food guide ([www.choosemyplate.gov](http://www.choosemyplate.gov)).

14.02 Explain regional, cultural, and religious food references.

14.03 Prepare a basic food plan.

14.04 Demonstrate knowledge of the need for thickened liquids and fluid consistency.

14.05 Identify methods of maintaining fluid balance including encouraging and restricting fluids.

14.06 Monitor and document nutritional intake.

14.07 Assist patient with and maintain therapeutic diets.

14.08 Describe the nutrients, their sources and significance in promoting health.

14.09 List factors which must be considered when purchasing food.

14.10 List factors which must be considered when storing food safely.

14.11 Identify methods of safe food preparation.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Practical Nursing Foundations 2A  
**Course Number:** 8418430  
**Course Credit:** 1

**Course Description:**

The objectives in the course include growth & development across the lifespan, performance of nursing procedures, pharmacology, mental health, healthy lifestyle, and education for family and community awareness.

<b>Practical Nursing Foundations 2A</b>	
15.0	Describe human growth and development across the lifespan. – The student will be able to:
15.01	Describe characteristics of growth and development from conception to birth.
15.02	Describe characteristics of growth and development from birth through preschool.
15.03	Describe characteristics of growth and development from school age through adolescence.
15.04	Describe characteristics of growth and development of the adult through the life span.
15.05	Identify components of the grief process across the lifespan.
16.0	Demonstrate the performance of nursing procedures (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
16.01	Perform data collection.
16.02	Apply hot and cold applications.
16.03	Assist patient with sitz bath.
16.04	Describe and demonstrate how to monitor patient's pre and post special procedures (e.g. I.V.P., myelogram, MRI, CAT scan).
16.05	Apply bandage as appropriate.
16.06	Perform clean and sterile dressing changing procedures.
16.07	Insert straight/indwelling catheter.

## **Practical Nursing Foundations 2A**

- |       |  |
|-------|--|
| 16.08 | Obtain specimen from patient with indwelling catheter.             |
| 16.09 | Remove indwelling catheter.  |
| 16.10 | Demonstrate how to assist with physical examination.               |
| 16.11 | Assist patient with diagnostic procedures.                         |
| 16.12 | Irrigate wound.  |
| 16.13 | Apply cervical collar.   |
| 16.14 | Apply orthopedic devices including binders, braces and splints.    |
| 16.15 | Apply anti-embolic hose and sequential compression devices.        |
| 16.16 | Care for patient in skin, skeletal traction and external fixators. |
| 16.17 | Clean tong/pin site.   |
| 16.18 | Describe and demonstrate how to monitor chest drainage system.     |
| 16.19 | Perform naso-oral suction.   |
| 16.20 | Perform tracheostomy care.   |
| 16.21 | Demonstrate how to instruct patient in breathing exercises.        |
| 16.22 | Set up vaporizer/humidifier.                                       |
| 16.23 | Administer and maintain oxygen.                                    |
| 16.24 | Collect timed urine specimen.                                      |
| 16.25 | Collect clean-catch (midstream-voided) urine specimen.             |
| 16.26 | Test urine using point of care testing procedures.                 |
| 16.27 | Irrigate urinary catheter.   |
| 16.28 | Demonstrate how to maintain continuous urinary bladder irrigation. |
| 16.29 | Change ostomy appliance.   |



## **Practical Nursing Foundations 2A**

16.30	Connect nasogastric tube to suction machine.
16.31	Remove nasogastric tube.
16.32	Administer enteral feeding.
16.33	Administer enema.
16.34	Test stool for occult blood.
16.35	Irrigate nasogastric tube.
16.36	Irrigate oral cavity.
16.37	Irrigate colostomy.
16.38	Demonstrate how to maintain enteral feeding tubes.
16.39	Perform neurological checks.
16.40	Logroll patient.
16.41	Irrigate ear.
16.42	Irrigate eye.
16.43	Obtain and test a drop of blood for glucose monitoring.
16.44	Perform IV calculations.
16.45	Observe intravenous infusion and report signs of adverse reactions.
16.46	Inspect insertion site and remove IV needle or catheter from peripheral veins.
16.47	Hang bags or bottles of hydrating fluid.
17.0	Demonstrate how to administer medication (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
17.01	Identify controlled substances and associated legal and safety issues.
17.02	Demonstrate accurate dosage calculation.
17.03	Demonstrate the six rights of administering medication.

## **Practical Nursing Foundations 2A**

17.04	Demonstrate how to observe and respond to patient's need for medication.
17.05	Demonstrate how to administer topical medication.
17.06	Administer inhalants.
17.07	Administer oral medication.
17.08	Administer sublingual medication.
17.09	Administer rectal medication.
17.10	Administer vaginal medication.
17.11	Administer eye medications.
17.12	Administer eardrops.
17.13	Administer nose drops.
17.14	Administer intramuscular injection (including Z-tract).
17.15	Administer intradermal injection.
17.16	Administer subcutaneous injection.
17.17	Properly obtain, monitor and document use of controlled substances.
17.18	Instill bladder medication.
17.19	Care for equipment and supplies used to administer medications.
17.20	Assist the patient with safe self-administration of medications; reinforce teaching by the nurse on the patient's medication, their expected effects and potential side effects.
17.21	Observe and communicate effects of medications to the patient's assigned nurse.
17.22	Document administration of medication and patient's response on medical record.
17.23	Store medications properly according to facility policy and procedures.
17.24	Demonstrate use of medication resources.
18.0	Demonstrate how to provide bio-psycho-social support (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). - The student will be able to:

## **Practical Nursing Foundations 2A**

18.01	Discuss family roles and their significance to health.
18.02	Respond to emotional needs of patient and family.
18.03	Demonstrate therapeutic communication.
18.04	Discuss coping mechanisms as seen in the performance of healthcare.
18.05	Differentiate between mental health and mental illness.
18.06	Recognize signs and symptoms of the various mental health disorders.
18.07	Discuss treatment modalities for the various mental health disorders.
18.08	Recognize the signs and symptoms for potential suicide and homicidal ideations in the patient and initiate appropriate interventions.
18.09	Describe treatments and resources for the addicted client.
18.10	Describe drug seeking behaviors and resources for potential risk of addiction.
18.11	Identify an individual in crisis and describe appropriate interventions.
18.12	Describe the common personality traits in mental health disorders including addictive behaviors.
18.13	Correlate common psychological and developmental theories with both bio- and psychosocial components of health.
18.14	Utilize verbal de-escalation techniques for agitated patients.
19.0	Demonstrate healthy lifestyle responsibility specific to personal health maintenance. - The student will be able to:
19.01	Identify psychological reactions to illness including defense mechanisms.
19.02	Identify complementary and alternative health practices.
19.03	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
19.04	Explain the basic concepts of positive self-image, wellness and stress.
19.05	Develop a wellness and stress control plan that can be used in personal and professional life.
19.06	Discuss annual medical screenings.
19.07	Define dental health and self-care practices.

## **Practical Nursing Foundations 2A**

19.08 Provide education in warning signs and risk factors for mental health issues.

19.09 Apply cultural diversity related to spirituality. Acknowledge cultural diversity and/or spirituality when providing patient care.

19.10 Identify education level.

20.0 Implement education and resources for family wellness. – The student will be able to:

20.01 Discuss risk factors in communicable diseases.

20.02 Provide information on community resources for prenatal care.

20.03 Provide current immunization practices.

20.04 Discuss healthy nutrition options and resources.

20.05 Provide information on abuse and neglect in relationships.

21.0 Participate in community health awareness forums. – The student will be able to:

21.01 Perform basic medical screenings such as vital signs, weight, glucose, cholesterol, and body mass index.

21.02 Discuss risk factors, screenings and resources for cancer.

21.03 Identify and provide resources for mental health conditions including suicide and substance abuse.

21.04 Discuss collaborative community strategies from healthcare providers, law enforcement agencies, religious affiliates, education systems, and legislative offices.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Practical Nursing Foundations 2B  
**Course Number:** 8418440  
**Course Credit:** 1

**Course Description:**

This course is a continuation of Practical Nursing Foundation 2A and may be concurrent with Practical Nursing Foundation 2A. Clinical experiences will allow the student to practice the role of the practical nurse as a member of the health team and to participate in the health and wellness aspects of the patient and family.

The clinical experience provides the student with the opportunity to build on acquired knowledge and skills, to practice and develop skills in selected procedures, including administration of medications, to apply nursing principles in meeting the needs of medical surgical patients including the aged and/or chronically ill patient, and practice and understand the role of the practical nurse. It reinforces and expands practice with common diseases included in Practical Nursing Foundations 1.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Medical Surgical Nursing 1A  
**Course Number:** 8418450  
**Course Credit:** 1

**Course Description:**

The objectives in the course include Medical/ Surgical Nursing procedures for the following body systems: Circulatory/ Cardiovascular, Respiratory, Lymphatic/Immune, Musculoskeletal, Endocrine, and Integumentary/Sensory and care for the Pre- Op and Post- Op patient.

<b>Medical Surgical Nursing 1A</b>	
22.0	Demonstrate how to care for the surgical patient with a cardiovascular, respiratory, lymphatic, musculoskeletal, endocrine, or integumentary disease/disorder (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
22.01	Identify signs and symptoms of disease/disorders of the body systems.
22.02	Identify diagnostic tests used to determine diseases/disorders of the body systems.
22.03	Identify medications used in the treatment of diseases/disorders of the body systems.
22.04	Identify nutritional needs of patients with diseases/disorders of the body systems.
22.05	Identify the symptoms of acute/chronic psychological distress.
22.06	Care for the patient with a:
22.06.01	Cardiovascular/Circulatory disease/disorder
22.06.02	Respiratory disease/disorder
22.06.03	Lymphatic/Immune disease/disorder
22.06.04	Musculoskeletal disease/disorder
22.06.05	Endocrine disease/disorder
22.06.06	Integumentary/Sensory disease/disorder
23.0	Demonstrate how to care for pre-operative and post-operative patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
23.01	Assist the RN with pre-operative and post-operative teaching.
23.02	Perform a surgical prep.

**Medical Surgical Nursing 1A**

23.03 Prepare patient for operating room.

23.04 Provide post-operative care.

23.05 Reinforce post-operative discharge teaching provided by the nurse.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Medical Surgical Nursing 1B  
**Course Number:** 8418460  
**Course Credit:** 1

**Course Description:**

This course is a continuation of Medical Surgical Nursing 1A and may be concurrent with Medical Surgical Nursing 1A. Clinical experiences will allow the student to practice the role of the practical nurse as a member of the health team and to participate in the health and wellness aspects of the patient and family.

The clinical experience provides the student with the opportunity to build on acquired knowledge and skills, to practice and develop skills in selected procedures, including administration of medications, to apply nursing principles in meeting the needs of medical surgical patients, the aged and/or chronically ill patient, and practice and understand the role of the practical nurse.



Florida Department of Education  
Student Performance Standards

**Course Title:** Medical Surgical Nursing 2A  
**Course Number:** 8418470  
**Course Credit:** 1

Course Description:

The objectives in the course include Medical/ Surgical Nursing procedures for the following body systems: Gastrointestinal, Neurological, Urinary, and Reproductive or Oncologic.

<b><u>Medical Surgical Nursing 2A</u></b>	
24.0	Demonstrate how to care for the surgical patient with a gastrointestinal, neurological, urinary, reproductive, or oncologic disease/disorder (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
24.01	Identify signs and symptoms of disease/disorders of the body systems.
24.02	Identify diagnostic tests used to determine diseases/disorders of the body systems.
24.03	Identify medications used in the treatment of diseases/disorders of the body systems.
24.04	Identify nutritional needs of patients with diseases/disorders of the body systems.
24.05	Identify the symptoms of acute/chronic psychological distress.
24.06	Care for the patient with a:
24.06.01	Gastrointestinal disease/disorder
24.06.02	Neurological disease/disorder
24.06.03	Urinary disease/disorder
24.06.04	Reproductive disease/disorder
24.06.05	Oncologic disease/disorder

Florida Department of Education  
Student Performance Standards

**Course title:** Medical Surgical Nursing 2B  
**Course number:** 8418480  
**Course credit:** 1

**Course Description:** This course is a continuation of Medical Surgical Nursing 2A and may be concurrent with Medical Surgical Nursing 2A. Clinical experiences will allow the student to practice the role of the practical nurse as a member of the health team and to participate in the health and wellness aspects of the patient and family.

The clinical experience provides the student with the opportunity to build on acquired knowledge and skills, to practice and develop skills in selected procedures, including administration of medications, to apply nursing principles in meeting the needs of medical surgical patients, the aged and/or chronically ill patient, and practice and understand the role of the practical nurse.

**Florida Department of Education  
Student Performance Standards**

**Course Title:**        **Comprehensive Nursing and Transitional Skills**  
**Course Number:**    **8418490**  
**Course Credit:**     **1**

The objectives in this course include obstetrics care, SUIDS education for patients, pediatric care, and graduate transition and employability skills for the practical nurse.

The clinical experience provides the student with the opportunity to build on acquired knowledge and skills, to practice and develop skill in selected procedures, to apply nursing principles in meeting the needs of the obstetrical patient and the newborn, the child and the elderly patient and to practice the role of the practical nurse as a member of the health team and to participate in the health and wellness aspects of the patient and family.

**Comprehensive Nursing and Transitional Skills**

25.0	Demonstrate how to care for maternal/newborn patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
25.01	Describe prenatal care and normal development of the fetus.
25.02	Identify complications and interventions during pregnancy.
25.03	Describe how to assist the RN with admitting the patient to labor and delivery.
25.04	Describe the stages of the labor process and nursing responsibilities.
25.05	Describe the importance of monitoring contractions.
25.06	Recognize the importance of monitoring fetal heart rate.
25.07	Recognize signs/symptoms of fetal distress.
25.08	Describe signs of complications during labor and delivery and nursing interventions.
25.09	Demonstrate how to assist the RN with preparing the patient for Caesarean.
25.10	Describe and demonstrate care during delivery process.
25.11	Describe Apgar score.

## **Comprehensive Nursing and Transitional Skills**

25.12 Demonstrate how to suction infant's respiratory passage with bulb syringe.

25.13 Demonstrate how to identify infant using mother's bracelet.

25.14 Demonstrate how to weigh and measure infant.

25.15 Demonstrate how to bathe infant.

25.16 Demonstrate how to carry infant.

25.17 Demonstrate how to feed infant.

25.18 Demonstrate how to collect urine specimen from infant.

25.19 Describe post- partum care.

25.20 Demonstrate perineal care.

25.21 Describe breast care for both breast feeding and bottle feeding mothers.

25.22 Assist mother with infant care.

25.23 Describe the care required for an infant with a circumcision.

25.24 Demonstrate perineal care and diapering technique.

25.25 Describe the discharge process of the postpartum and infant patient.

26.0 Demonstrate knowledge of SIDS/ SUIDS as it relates to the practical nursing role. – The student will be able to:

26.01 Define SIDS and Sudden Unexpected Infant Death (SUID).

26.02 Identify the critical SIDS/SUID risk-reduction methods for parents and caregivers.

26.03 Demonstrate an understanding of the benefits of back sleeping for newborns and infants.

26.04 Describe the LPN's key role as educators to parents and caregivers about SIDS/SUID.

27.0 Demonstrate how to care for pediatric patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:

27.01 Describe how to adapt nursing care for the pediatric patient.

27.02 Describe how to apply safety principles for the pediatric patient.

## **Comprehensive Nursing and Transitional Skills**

27.03 Describe general characteristics, particular needs, and problems of pediatric patients.

27.04 Demonstrate how to prepare patient and family for the hospital experience.

27.05 Identify signs and symptoms of common disorders/diseases.

27.06 Demonstrate how to implement prescribed nutritional requirement.

27.07 Demonstrate how to provide diversion and recreational activities.

28.0 Develop transitional skills. - The student will be able to:

28.01 Organize complex patient care assignments with multiple clients.

28.02 Discuss F.S. 464 and the corresponding Rules.

28.03 Discuss the scope of practice of a Licensed Practical Nurse in a leadership/supervisory role.

28.04 Describe the role of the LPN in delegation to unlicensed personnel.

28.05 Describe the Florida Board of Nursing requirements for licensure renewal including multi-state licensure.

28.06 Demonstrate an understanding of licensure by examination and by endorsement.

28.07 Complete application for licensure by examination.

28.08 Discuss current legislation pertinent to the Florida Board of Nursing and its effect on your nursing practice.

28.09 Determine how to apply for membership in a professional organization.

28.10 Discuss benefits and responsibilities of the LPN in membership in a professional organization.

29.0 Demonstrate employability skills specific to practical nursing. - The student will be able to:

29.01 Identify personal traits or attitudes desirable in a member of the healthcare team.

29.02 Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality, and behavior (i.e. telephone etiquette, courtesy, and self-introductions).

29.03 Recognize the potential for stress in the practice of nursing and develop methods of managing stress.

29.04 Recognize the potential for violence in the workplace and describe methods of reducing that potential.

29.05 Identify employment opportunities for licensed practical nurses.

**Comprehensive Nursing and Transitional Skills**

29.06 Participate in interview skill development activities.

29.07 Complete letters of job application and resignation.

29.08 Complete a professional portfolio, including a resume.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

The occupational standards and benchmarks outlined in this secondary program correlate to the standards and benchmarks of the postsecondary program with the same Classification of Instructional Programs (CIP) number.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal; therefore, the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.



## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Electrocardiograph Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Career Preparatory**

Program Number	8427100
CIP Number	0351090204
Grade Level	9-12
Standard Length	3 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2031 Cardiovascular Technologists and Technicians 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

The program is designed to prepare students for employment as EKG Technicians (SOC Code: 29-2031 Cardiovascular Technologists and Technicians).

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction totaling three credits. The two credit Health Science Core (Health Science Anatomy & Physiology 8417100 and Health Science Foundations 8417110) is required as a prerequisite for all programs. Secondary students completing the two required courses will not have to repeat the core in postsecondary.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G (See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit	31-9099	3	
8427130	Electrocardiograph Technician 3	LAB TECH @7 7G EKG 7G REG NURSE 7 G PARAMEDIC @7 7G MED ASST 7G TEC X RAY @7 7G RESP THER @7 7G MED PROF 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	1 credit	29-2031	3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

### **Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

### **Standards 28-34 encompass competencies specific to EKG Technician:**

- 28.0 Describe the cardiovascular system.
- 29.0 Identify legal and ethical responsibilities of an EKG technician.
- 30.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 31.0 Perform patient care techniques in the health care facility.
- 32.0 Recognize normal and abnormal monitoring and testing results.
- 33.0 Describe cardiovascular drugs, their actions, use and adverse effects.
- 34.0 Demonstrate knowledge of other cardiovascular diagnostic modalities.

**Florida Department of Education  
Student Performance Standards****Health Science Core:**

The first two courses in this program are referred to as the Health Science Core and consist of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). To ensure consistency whenever these courses are offered, the standards and benchmarks for the health science core have been placed in a separate document.

The two credit core is required as a prerequisite for all secondary programs except for Practical Nursing and Pharmacy Technician. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified courses for employment or remain for advanced training or cross-training.

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of an overview of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).

The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students may shadow professionals throughout the course.

**Florida Department of Education  
Student Performance Standards**

**Course Title:**        **Electrocardiograph Technician 3**  
**Course Number:**   **8427130**  
**Course Credit:**     **1**

**Course Description:**

This course prepares students to be employed as Electrocardiograph Technicians. Content includes, but is not limited to, a foundation in the cardiovascular system, safety measures for the individual, co-workers and patients as well we training in the appropriate theories and instruments used by an Electrocardiograph Technician.

<b>CTE Standards and Benchmarks</b>	
28.0	Describe the cardiovascular system. -- The student will be able to:
28.01	Locate the heart and surrounding structures.
28.02	Diagram and label the parts of the heart and list the functions of each labeled part.
28.03	Trace the flow of blood through the cardiopulmonary system.
28.04	Identify and describe the electrical conduction system.
28.05	Describe the function of the autonomic nervous system.
28.06	Describe signs and symptoms of a patient demonstrating poor perfusion or low cardiac output and state the importance of rapid reporting.
29.0	Identify legal and ethical responsibilities of an EKG technician. -- The student will be able to:
29.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
29.02	Maintain a safe and efficient work environment.
29.03	Maintain EKG equipment so it will be safe and accurate.
29.04	Implement appropriate Joint Commission patient safety goals and adhere to HIPAA regulations regarding Protected Health Information (PHI).
30.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. -- The student will be able to:
30.01	Calibrate and maintain EKG equipment in the work environment.

## CTE Standards and Benchmarks

30.02	Identify three types of lead systems standard/limb, augmented, and precordial/chest).
30.03	State Einthoven's triangle.
30.04	Demonstrate proper lead placement including lead placement with special considerations for various patients with special needs to include pediatric, amputee, and posterior and right sided EKGs.
30.05	Identify artifacts and mechanical problems.
30.06	Perform a 3, 5, and 12 lead EKG.
30.07	Recognize normal sinus rhythm.
30.08	Report dysrhythmias that are not normal sinus rhythm.
30.09	Recognize signs and symptoms of cardiopulmonary compromise on the EKG tracing and understand the importance of rapid reporting.
30.10	Verify accuracy of lead placement on the EKG.
30.11	Verify setting on the EKG machine such as paper speed, sensitivity (gain), and Hertz (Hz) prior to use.
31.0	Perform patient care techniques in the health care facility. -- The student will be able to:
31.01	Describe the physical and mental preparation of the patient for EKG testing.
31.02	Identify patient and verify the requisition order.
31.03	Prepare patient for cardiovascular diagnostic testing.
31.04	Obtain patient's vitals (temperature, pulse, respirations, blood pressure, and pulse oximetry) in preparation for cardiovascular diagnostic testing and report abnormalities.
31.05	State precautions required when performing cardiovascular diagnostic procedures.
31.06	Convey the importance of maintaining a safe patient environment and evaluate potential hazards in the work environment.
32.0	Recognize normal and abnormal monitoring and testing results. -- The student will be able to:
32.01	Inspect and measure the various waveforms of a cardiac cycle including, segments, complexes, heart rates and intervals.
32.02	Identify electrical axis.
32.03	Recognize pacemaker spikes on the EKG and state the purpose of pacemakers.
32.04	Recognize normal and deviations from normal sinus rhythms.



## CTE Standards and Benchmarks

32.05	Recognize all atrial rhythms.
32.06	Recognize all junctional rhythms.
32.07	Recognize all ventricular rhythms.
32.08	Recognize all types of heart blocks.
32.09	Recognize normal and deviations from single chamber and dual chamber pacemakers as well as all implantable cardioverter defibrillators.
32.10	Identify myocardial ischemia, injury, and infarction on EKG tracing.
32.11	Recognize atrial and ventricular hypertrophies.
32.12	Recognize ectopic beats and any rare phenomena.
32.13	Recognize normal and deviations from normal 12 lead EKG results.
32.14	Describe potential patient responses to all dysrhythmias and other EKG abnormalities.
32.15	Recognize and respond promptly to life threatening dysrhythmias during continuous monitoring such as telemetry.
33.0	Describe cardiovascular drugs, their actions, use, and adverse effects. -- The student will be able to:
33.01	Describe the mechanisms by which common cardiovascular drugs work including actions and adverse effects.
33.02	Differentiate between normal and abnormal EKG changes potentially due to drugs.
34.0	Demonstrate knowledge of other cardiovascular diagnostic modalities. -- The student will be able to:
34.01	Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.
34.02	Demonstrate the procedures for preparing the patient for stress testing/scanning exercise treatment and provide patient education.
34.03	Understand and demonstrate patient documentation for all types of monitoring.
34.04	Describe other modalities of cardiovascular diagnosis and interpretation.
34.05	Maintain patient cardiac alarm policy at all times as per acceptable facility guideline. .

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**This program requires a clinical component of approximately 50% the length of the courses following the health science core. A portion of the clinical experience can be achieved through simulation when appropriate.**

Clinical courses require contact hours in the clinical setting in order to complete the health science program. Hospitals, nursing homes, and other clinical facilities with clinical affiliation agreements limit the number of students that can rotate and/or be on site at one time. Most facilities, including hospitals and nursing homes, limit the number of students to 15. Due to these industry limitations, it is recommended that the student ratio be 15:1 (student/teacher) based on the clinical facilities that students attend to for clinical training.

### Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Following the completion of the Health Science Core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Biomedical Sciences  
**Program Type:** Non Career Preparatory  
**Career Cluster:** Health Science

**Secondary – Non Career Preparatory**

Program Number	8708100
CIP Number	0326010201
Grade Level	9-12
Standard Length	4 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study and applications of biomedical sciences and the possibilities in the biomedical field.

The content includes but is not limited to the study of human body systems, medicine, health, key biological concepts, communication, transport of substances, locomotion, metabolic processes, defense, protection, research processes, engineering principles, and an introduction to bio-informatics. The program also includes the design and development of various medical interventions, including vascular stents, cochlear implants, and prosthetic limbs. In addition, students review the history of organ transplants and gene therapy, and stay updated on cutting-edge developments via current scientific literature.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

Students complete the three foundation courses (8708110, 8708120, and 8708130), and the capstone course (8708140).

This program is a planned sequence of instruction totaling four credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8708110	Principles of the Biomedical Sciences	BIOLOGY 1 @2	1 credit	3	EQ
8708120	Human Body Systems	REG NURSE 7 G	1 credit	3	EQ
8708130	Medical Interventions	MED PROF 7 G	1 credit	3	EQ
8708140	Biomedical Innovation	PARAMEDIC @7 7G	1 credit	3	
		LAB TECH @7 7G			
		PLTW HEALTH 7G			

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics)*

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of the nature of science and how to correctly use appropriate medical and scientific equipment.
- 02.0 Describe the importance of professional ethics and legal responsibilities.
- 03.0 Understand the structure and functions of the major human body systems, the organs making up these systems and the interconnections between body systems.
- 04.0 Understand how determining the cause of death involves the investigation of many aspects of the medical condition of the victim.
- 05.0 Explore various careers related to biomedical science and its impact on public health.
- 06.0 Understand and describe the importance of the cardiovascular system by examining the structure and function of the heart.
- 07.0 Understand and describe the importance of blood in relation to the cardiovascular system and the human body.
- 08.0 Demonstrate an understanding of how essential nutrients contribute to the health of the human body.
- 09.0 Describe how food provides nutrients for the body to help maintain homeostasis.
- 10.0 Describe and discuss the causes, symptoms, treatments and effects of diabetes and the impact that this specific disease has on the human body and human lifestyle.
- 11.0 Investigate the role of DNA and Chromosomes in the human body.
- 12.0 Describe factors that contribute to sickle cell disease and the impact it can have on the human body.
- 13.0 Understand the factors involved in heredity and mutation in relation to sickle cell disease.
- 14.0 Examine how changes in chromosomes or genes can cause disease/chromosomal mutations.
- 15.0 Demonstrate an understanding of the function of cholesterol in the body and its role in cardiovascular disease.
- 16.0 Describe molecular biological techniques for diagnosing diseases, specifically hypercholesterolemia.
- 17.0 Demonstrate an understanding of bacteria as a cause for infectious diseases.
- 18.0 Investigate the anatomical and physiological commonalities in the human body.
- 19.0 Analyze the individual differences in body systems in tissues and cells.
- 20.0 Investigate the significance of DNA in relation to individual identity.
- 21.0 Investigate the role the brain plays in the communication system of the human body.
- 22.0 Determine how electrical communication works in the body and its effects.
- 23.0 Determine how chemical communication works in the body.
- 24.0 Investigate how the human body responds to external stimuli.
- 25.0 Describe the role food plays in the conversion and use of energy in the body.
- 26.0 Describe the role of oxygen in cellular respiration and macromolecule metabolism.
- 27.0 Describe the role of water in maintain homeostasis.
- 28.0 Demonstrate an understanding of how joints directly contribute to the movement of the human body.
- 29.0 Demonstrate an understanding of how muscles directly contribute to the movement of the human body.
- 30.0 Demonstrate an understanding of how blood acts as a transport for substances through the human body.
- 31.0 Using knowledge of power and movement in the human body, describe how the body fuels and responds to exercise.
- 32.0 Describe the structure and function of the integumentary system.
- 33.0 Describe the composition of bones and how the skeletal system serves as a protection for the human body.
- 34.0 Describe the composition the immune system and how it serves as a protection for the human body.
- 35.0 Analyze how various external factors require body systems to work together to maintain health and homeostasis.



- 36.0 Investigate the variety of interventions involved in the prevention, diagnosis and treatment of infectious disease.
- 37.0 Explore the factors that contribute to the effectiveness of antibiotics against infectious diseases.
- 38.0 Investigate the pathology of hearing loss as a detrimental effect of infectious disease.
- 39.0 Explore vaccination as a mode of infectious disease prevention.
- 40.0 Investigate the available types of genetic testing/screening and their ethical implications.
- 41.0 Examine the current reproductive and genetic technology and discuss the future of medical interventions.
- 42.0 Explore the diagnostic techniques and technology being used to better diagnose and understand cancer.
- 43.0 Explore the potential risk factors associated with cancer and the various situations which cause changes to DNA.
- 44.0 Investigate the treatments and therapies available to treat the physical, mental, and emotional effects of cancer.
- 45.0 Explore future medical interventions for cancer.
- 46.0 Explore the medical implications of proteins produced and purified in a laboratory setting.
- 47.0 Investigate the epidemiology and therapeutic interventions of kidney failure.
- 48.0 Explore the process, policies and procedures involved in organ transplantation.
- 49.0 Investigate how advances in medical knowledge and technology can aid in building a better human body for the future.
- 50.0 Investigate biomedical problems related to clinical care by designing an effective emergency care center.
- 51.0 Explore the variety of research study designs available and investigate how to set up and conduct valid and reliable studies.
- 52.0 Explore the process, knowledge and skills required to design a medical innovation.
- 53.0 Explore biomedical innovation through investigating water contamination.
- 54.0 Evaluate a public health issue and combat the problem using knowledge of epidemiology, disease diagnosis and public health resources.
- 55.0 Understand medical research and the process of writing a scientific grant.
- 56.0 (Optional) Use modern molecular biology techniques to clone and transfer DNA.
- 57.0 (Optional) Assuming the role of a medical expert, investigate a mysterious death using forensics autopsy techniques.
- 58.0 (Optional) Students work independently in an area of interest in the biomedical sciences and outline milestones in a long-term open ended problem using skills learned throughout the program to complete the project.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Principles of Biomedical Science  
**Course Number:** 8708110  
**Course Credit:** 1

**Course Description:**

Students investigate the human body systems and various health conditions. This course is designed to provide an overview of all the courses in the Biomedical Sciences program and lay the scientific foundation for subsequent courses. Students are introduced to human physiology, medicine, research processes and bioinformatics. Key biological concepts including homeostasis, metabolism, inheritance of traits, and defense against disease are embedded in the curriculum. Engineering principles including the design process, feedback loops, and the relationship of structure to function are also incorporated.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

<b>CTE Standards and Benchmarks</b>	
01.0	Demonstrate an understanding of the nature of science and how to correctly use appropriate medical and scientific equipment. – The student will be able to:
01.01	Develop a theory through evidence-based research and find a conclusion to a problem utilizing the scientific method.
01.02	Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.
01.03	Practice and demonstrate how to properly and safely use a microscope.
02.0	Describe the importance of professional ethics and legal responsibilities. – The student will be able to:
02.01	Discuss of the basics of the legal framework of the healthcare occupations
02.02	Explain common practices that could result in malpractice, liability and/or negligence.
02.03	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).

## CTE Standards and Benchmarks

02.04	Describe the purpose of Informed Consent from the patient and provider perspective.
02.05	Differentiate between legal and ethical issues in healthcare.
02.06	Evaluate and justify decisions based on ethical reasoning.
02.07	Identify and explain personal and long-term consequences of unethical or illegal behaviors in the workplace.
03.0	Understand the structure and functions of the major human body systems, the organs making up these systems and the interconnections between body systems. – The student will be able to:
03.01	Identify the major body systems and their functions.
03.02	Demonstrate an understanding of how body systems work together to maintain homeostasis.
03.03	Identify and locate specific organs that comprise the major human body systems.
03.04	Describe the general structure and function of each of these organs.
03.05	Identify common diseases and conditions that can disrupt the functioning of cells, tissues and organs within the body.
04.0	Understand how determining the cause of death involves the investigation of many aspects of the medical condition of the victim. – The student will be able to:
04.01	Describe how evidence at a crime scene, such as blood, hair, fingerprints, and shoeprints can help forensic investigators determine what might have occurred and help identify or exonerate potential suspects.
04.02	Understand that evidence can be seen post-mortem through medical examination and interpret information from an autopsy report to predict the manner of death.
04.03	Analyze bloodstain patterns to determine the mechanism of death through experimental design.
04.04	Analyze evidence gathered at a simulated crime scene.
04.05	Describe some of the major aspects involved in determining cause of death, including the gross physical condition of a victim, the need for internal and external examination of the body, and the need for chemical and microscopic analysis of tissues and body fluids.
04.06	Discuss how the use of medical terminology and the involvement of many medical professionals are vital to the investigation process.
05.0	Explore various careers related to biomedical science and its impact on public health. –The student will be able to:
05.01	Discuss and describe the role of a variety of biomedical sciences professionals that are involved in determining the cause of death.
05.02	Compare and contrast the role of the medical examiner and the coroner.
05.03	Investigate and discuss a variety of biomedical sciences careers that relate to the prevention, diagnosis, and treatment of both cardiovascular and infectious disease.

## CTE Standards and Benchmarks

06.0	Understand and describe the importance of the cardiovascular system by examining the structure and function of the heart. – The student will be able to:
06.01	Understand and discuss that the human heart is a four-chambered living pump that provides the force needed to transport blood, both oxygenated and de-oxygenated, throughout the body without mixing the two types of blood.
06.02	Identify and describe the gross structures and functions of the heart.
06.03	Understand how a heartbeat is caused by the contraction of cardiac muscle cells that result in the blood flow from the heart to the arteries and to the whole body.
06.04	Calculate heart rate as the number of beats per minute.
06.05	Explain how blood pressure is a measure of the force put on the vascular walls by the blood as it is pushed by the cardiac muscles through the vascular system.
06.06	Describe the flow of electricity through the heart and the result of this electrical pattern.
06.07	Indicate how heart rate, blood pressure and EKG can be used to measure a person's medical condition.
06.08	Describe how selected internal and external factors such as being frightened, exercise, exposure to cold and rest affect heart function including heart rate, blood pressure and EKG.
06.09	Demonstrate the importance of technology in biomedical sciences by using software and equipment to collect and analyze cardiovascular data.
07.0	Understand and describe the importance of blood in relation to the cardiovascular system and the human body. – The student will be able to:
07.01	Explain that blood is a liquid connective tissue composed of erythrocytes, leukocytes and thrombocytes that are suspended in liquid plasma.
07.02	Compare and contrast the functions of erythrocytes, leukocytes, and thrombocytes.
07.03	Recognize that blood is a major transport for many substances in the body that must be replenished throughout life including hormones, gases, molecules, waste, and nutrients.
08.0	Demonstrate an understanding of how essential nutrients contribute to the health of the human body. – The student will be able to:
08.01	Identify the different categories used in a food label and what they mean in relation of the nutrition of the body.
08.02	Compare and contrast the recommended daily values for food groups, minerals and vitamins.
08.03	Describe that food is made of macromolecules and can be classified as protein, fats, or carbohydrates, which in turn are made of atoms.
08.04	Describe the structure and function of atoms.
08.05	Describe how homeostasis depends upon many different chemical reactions and large organic molecules.
08.06	Describe the role of chemical bonding in chemical reactions and transfer of energy.

## CTE Standards and Benchmarks

09.0	Describe how food provides nutrients for the body to help maintain homeostasis. – The student will be able to:
09.01	Describe the structure and function of macromolecules in relation to the breakdown of food and the human body.
09.02	Differentiate between the four classes of macromolecules in terms of their structure and function and build a model of each.
09.03	Explain the role of chemical indicators in identifying chemical compounds.
09.04	Describe different foods that contain each kind of nutrients.
10.0	Describe and discuss the causes, symptoms, treatments and effects of diabetes and the impact that this specific disease has on the human body and human lifestyle. – The student will be able to:
10.01	Understand that there are two different types of feedback systems, positive and negative.
10.02	Summarize how insulin regulates the transfer of glucose into the body cells and its role as part of the feedback system.
10.03	Compare and contrast Type 1 & Type 2 Diabetes.
10.04	Explain the major causes, symptoms, complications effects and treatments of both Type 1 and Type 2 diabetes.
10.05	Understand and describe the dietary requirements and restrictions of diabetics of both types and how these changes can impact one's lifestyle in order to avoid severe and life threatening diabetic emergencies.
10.06	Describe healthy behaviors and actions that could help prevent the onset of Type 2 diabetes.
10.07	Investigate and describe the roles of Biomedical Sciences professions related to the treatment and prevention of Diabetes.
11.0	Investigate the role of DNA and Chromosomes in the human body. – The student will be able to:
11.01	Describe the Structure and function of a chromosome.
11.02	Describe the structure and function of deoxyribonucleic acid (DNA).
11.03	Explain the relationship between chromosomes, DNA and Genes.
11.04	Explain the interactions between nucleotides using DNA models.
11.05	Demonstrate how the genetic information in DNA molecules provides instructions for creating protein molecules and that the structure of DNA is basically the same for all living organisms.
11.06	Describe the importance of nucleotides in the process of creating protein molecules with the information from DNA.
11.07	Distinguish between the different levels of proteins and understand that a protein's shape can change depending on its environment.
11.08	Explain how the sequence of amino acids in a protein determines the protein's structure.

## CTE Standards and Benchmarks

11.09	Demonstrate the appropriate laboratory methods to isolate DNA from plant and animal cells.
11.10	Explain how restriction enzymes cut DNA.
11.11	Describe how gel electrophoresis separates DNA fragments.
11.12	Recognize that gel electrophoresis can be used to examine DNA differences between individuals.
12.0	Describe factors that contribute to sickle cell disease and the impact it can have on the human body. – The student will be able to:
12.01	Describe and identify the difference between the appearance of normal and sickle cell blood using a microscope.
12.02	Describe the function of hemoglobin found in erythrocytes.
12.03	Demonstrate how changes to the structure of a protein can change its ability to work properly.
12.04	List the major symptoms and complications of sickle cell disease.
12.05	Research the occurrence of sickle cell disease between different countries around the world and investigate the reasons for the differences in incidence rates.
12.06	Investigate and discuss biomedical sciences careers responsible for the diagnosis and treatment of Sickle Cell Disease.
13.0	Understand the factors involved in heredity and mutation in relation to sickle cell disease. – The student will be able to:
13.01	Describe that chromosomes each carry numerous genes that are passed along from parents to offspring through reproductive cells.
13.02	Identify and be able to use a karyotype to identify multiploidy and sex in an individual.
13.03	Compare and contrast between chromosomal and gene mutations.
13.04	Explain the results of insertion and deletion gene mutations and the effects that they have on the corresponding proteins produced by the gene, such as b-globin protein and their associations with Sickle Cell Disease.
13.05	Describe the process of meiosis.
13.06	Explain how cell division results in the formation of haploid gametes.
13.07	Compare and contrast mitosis and meiosis and relate to the processes of sexual reproduction and their consequences for genetic variation.
13.08	Analyze genotype to determine phenotype.
13.09	Analyze the major symptoms and complications of the sickle cell trait in relation to sickle cell disease.
13.10	Explain how anemia and lack of energy in a cell are related.

## CTE Standards and Benchmarks

13.11	Use appropriate research techniques to obtain information on the symptoms and complications of the sickle cell trait and disease.
13.12	Create and analyze pedigree charts to illustrate passage of a trait through at least three generations and calculate the probability of a trait appearing in offspring.
14.0	Examine how changes in chromosomes or genes can cause disease/chromosomal mutations. – The student will be able to:
14.01	Define, identify and analyze karyotypes to determine multiploidy and sex.
14.02	Explain how karyotypes are used to diagnose certain medical conditions.
14.03	Explain how the substitution of a single amino acid can change a protein and indicate how it may change interactions with other proteins.
14.04	Identify the structure and function of chromosomes and their role in individual traits of humans.
14.05	Explain how specific mutations lead to specified genetic diseases.
15.0	Demonstrate an understanding of the function of cholesterol in the body and its role in cardiovascular disease. – The student will be able to:
15.01	Explain that there are different types of lipid molecules and that they have different physical properties and functions.
15.02	Describe how the type of bond between the carbon atoms in a fatty acid determines whether it is saturated or unsaturated with hydrogen atoms.
15.03	Explain that cholesterol is transported in the blood by protein complexes called high density lipoprotein (HDL) and low density lipoprotein (LDL) and the role each of them play in the body.
15.04	Describe how the measurement of these protein complexes affects a person's risk for cardiovascular disease.
15.05	Describe the function of an angiogram in diagnosing blocked vessels and list medical interventions to treat blocked vessels.
15.06	Discuss risk factors for cardiovascular disease.
16.0	Describe molecular biological techniques for diagnosing diseases, specifically hypercholesterolemia. – The student will be able to:
16.01	Explain how the processes of polymerase chain reaction (PCR), and DNA gel electrophoresis can be used in the diagnosis of genetic diseases and disorders such as the familial hypercholesterolemia.
16.02	Demonstrate using proper laboratory techniques how to separate DNA fragments by gel electrophoresis, including how to properly load a gel, how to use a micropipette, and how to set parameters using the power source.
16.03	Analyze the results of a gel electrophoresis to correctly diagnose the presence of the familial hypercholesterolemia mutation.
17.0	Demonstrate an understanding of bacteria as a cause for infectious diseases. – The student will be able to:
17.01	Identify the basic structures of a bacterial cell.

## CTE Standards and Benchmarks

17.02 Describe the epidemiology of different types of bacteria and why some cause disease while some do not.

17.03 Classify bacteria by shape, metabolism and reaction to gram staining.

17.04 Understand how antibiotics are used to treat infections and that their effectiveness depends on the type of bacteria that has caused the infection.

17.05 Explain that chronic use of antibiotics can cause resistance in bacteria and what that means to human health.

17.06 Describe the immune response in relation to the introduction of antigens.

17.07 Isolate and examine bacterial colonies using aseptic techniques.

17.08 Communicate effectively the symptoms, prevalence, and treatment for bacterial infection as well as the global and social impact of an infectious disease that is caused by bacteria.



**Florida Department of Education  
Student Performance Standards**

**Course Title:** Human Body Systems  
**Course Number:** 8708120  
**Course Credit:** 1

**Course Description:**

Students examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis. Students design experiments, investigate the structures and functions of the human body, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration. Exploring science in action, students build organs and tissues on a skeletal manikin, work through interesting real world cases and often play the role of biomedical professionals to solve medical mysteries.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

<b>CTE Standards and Benchmarks</b>	
18.0	Investigate the anatomical and physiological commonalities in the human body. -- The student will be able to:
18.01	List the major organs within each human body system and the functions of the different human body systems.
18.02	Describe how multiple body systems are interconnected.
18.03	Describe how the interconnections and interactions of multiple body systems are necessary for maintaining homeostasis.
18.04	Demonstrate the correct usage of directional terms and regional terms to identify locations of the human body.
18.05	Identify key directional terms on a model of the human body.
18.06	Apply knowledge of human body systems to indicate how disease can impact function in another system.
19.0	Analyze the individual differences in body systems in tissues and cells. – The student will be able to:
19.01	Describe the differences in the appearance of epithelial and connective tissues.
19.02	Explain the basic structure and function of the skeletal system.
19.03	Identify the muscles in the face around the eyes and mouth.
19.04	Interpret bone markings, bone landmarks and bone measurements to provide information about gender, race, ethnicity and height.
19.05	Use mathematical calculations to predict height from the length of a bone.
20.0	Investigate the significance of DNA in relation to individual identity. – The student will be able to:
20.01	Explain how restriction enzymes cut DNA.

## CTE Standards and Benchmarks

20.02	Explain how gel electrophoresis separates DNA fragments by size.
20.03	Analyze gel electrophoresis results.
20.04	Define biometrics and through research create an argument related to ethical issues associated with it.
20.05	Describe the way in which characteristics such as fingerprints, facial features and retinal patterns can be used to establish identity.
20.06	Design a comprehensive security plan for a real-world situation using biometrics.
20.07	Understand the roles and responsibilities of a forensic anthropologist and a DNA analyst.
21.0	Investigate the role the brain plays in the communication system of the human body. –The student will be able to:
21.01	Describe the general structure and function of the central nervous system.
21.02	Interpret how a malfunction in the nervous system would impact the function of the human body.
21.03	Identify the regions of the brain responsible for specific actions, emotions, or functions of human body.
21.04	Differentiate the regions of the brain that are responsible for basic life functions.
22.0	Determine how electrical communication works in the body. – The student will be able to:
22.01	Explain the basics of how electrical signals are created and transmitted in the human body.
22.02	Explain the roles of ions in creating electrical impulses in the human body.
22.03	Explain how neurotransmitters help propagate electrical impulses.
22.04	Describe neuron structure and function.
22.04.01	Explain the ascending and descending pathways of the CNS.
22.05	Analyze how reflexes impact reaction time.
22.06	Demonstrate an understanding of how nervous system disorder impacts quality of life.
22.07	Research the roles and responsibilities of biomedical professionals who can improve the quality of life for those coping with nervous system dysfunction.
22.08	Using data acquisition software to investigate the relationship between reflexes and reaction time.
23.0	Determine how chemical communication works in the body. – The student will be able to:
23.01	Explain the basics of how hormones interact with target cells.
23.02	Explain the difference between endocrine and exocrine glands as well as protein/peptide and steroid hormones.
23.03	Using research, interpret the symptoms and physical characteristics of a patient to determine an endocrine system pathology.
23.04	Explain in general how hormones contribute to maintain homeostasis.
24.0	Investigate how the human body responds to external stimuli. – The student will be able to:
24.01	Describe the structures and function of the eye.
24.02	Describe how the eye and the brain work together to produce vision.
24.03	Explain and demonstrate visual perception, including visual acuity, depth perception, peripheral vision, color vision, and the interpretation of optical illusions.
24.04	Utilize a Snellen chart to determine an individual's vision acuity.
24.05	Explain how the lens of the eye utilizes light waves to produce a visual image and explain how to correct visual problems with corrective lenses.
24.06	Describe the roles and responsibilities of an optometrist, ophthalmologist, and optician.
25.0	Describe the role food plays in the conversion and use of energy in the body. – The student will be able to:
25.01	Describe the human body systems that absorb process and distribute oxygen, water, and food.

## CTE Standards and Benchmarks

25.02	Describe the structure and function of organs in the human digestive system.
25.03	Explain how energy is stored and released in ATP through the process of hydrolysis and phosphorylation.
25.04	Assess overall health through analysis of calories consumed and calories expended in daily activities.
25.05	Explain the structure and function of, enzymes and co enzymes and how they all work together.
25.06	Explain the role of enzymes in maintaining homeostasis in the body.
25.07	Demonstrate an understanding of both lock and key models and induced fit models of enzyme function.
25.08	Interpret enzyme function in the digestive system through laboratory experiments.
25.09	Build a model of the human digestive system
25.10	Design and perform an experiment to determine optimal conditions for digestive enzyme reactions.
26.0	Describe the role of oxygen in cellular respiration and macromolecule metabolism. –The student will be able to:
26.01	Describe the structure and function of the human respiratory system.
26.02	Explain the process of gas exchange in the lungs and identify where in the lungs gas exchange occurs.
26.03	Explain that the blood is the primary transport for oxygen and carbon dioxide in the body.
26.04	Perform a spirometry test to determine an individual's tidal volume, inspiratory reserve volume, expiratory reserve volume, vital capacity, and total lung volume.
26.05	Analyze the differences of various medications used to treat respiratory dysfunction and describe the various pharmacological routes of administration for each.
26.05.01	Utilize pharmacological abbreviations to analyze prescriptions.
26.06	Explain the roles and responsibilities of a respiratory therapist.
27.0	Describe the role of water in maintaining homeostasis. – The student will be able to:
27.01	Describe the structure and function of the human urinary system.
27.02	Describe the structure and function of the kidney.
27.03	Describe and illustrate the movement of fluids and ions in and out of the various parts of the nephron.
27.04	Explain the role of ADH (anti-diuretic hormone) and Aldosterone on fluid and electrolyte balance in the body.
27.05	Compare and contrast the composition of blood and urine.
27.06	Build a model of the urinary system.
27.07	Analyze the results of a urinalysis test and apply the results to determine dysfunction of the urinary system.
27.08	Identify the components of a urinalysis test and determine when a urinalysis should be utilized.
28.0	Demonstrate an understanding of how joints directly contribute to the movement of the human body. – The student will be able to:
28.01	Describe the structure and function of a hinge joint, ball and socket joint, pivot joint, saddle joint, and gliding joint and be able to identify an example of each.
28.02	Describe the normal motion of various joints in the body using correct terminology.
28.03	Measure joint range of motion of various joints using a goniometer OR determine the normal range of motion for various joints in the body.
28.04	Compare the structure of a cow elbow to a human elbow.
28.05	Discuss differences in an individual's range of motion and the reason for these differences.
28.06	Discuss ways to improve joint flexibility such as stretching and other lifestyle modifications.
29.0	Demonstrate an understanding of how muscles directly contribute to the movement of the human body. – The student will be able to:

## CTE Standards and Benchmarks

29.01	Describe the structure and function of the three types of muscle tissue.
29.02	Identify specific muscles of the body and understand how muscles are named.
29.03	Describe the steps of muscle contraction.
29.04	Explain the sliding filament mechanism of muscle contraction.
29.05	Explain the connection between nerves and muscle.
29.06	Interpret muscle function by examining structure and attachment to bone.
29.07	Build a model of a muscle group.
29.08	Explain why rigor mortis occurs using the concepts of muscle contraction.
29.09	Determine the role of calcium in muscle contraction.
30.0	Demonstrate an understanding of how blood flow acts as a transport for substances through the human body. – The student will be able to:
30.01	Explain the relationship between the heart and lungs and the path of blood flow through these organs.
30.02	Demonstrate how to take a pulse and explain the steps of how to take blood pressure.
30.03	Identify major arteries and veins and specify the body region each supplies.
30.04	Interpret ankle brachial index (ABI) to determine possible blood vessel blockages.
30.05	Understand the relationship between the amounts of blood pumped by the heart through analysis of cardiac output values.
30.06	Investigate peripheral artery disease related to patient health through the analysis of patient symptoms and diagnostic testing.
30.07	Explain the structure and function of veins and explain how varicose veins form.
30.08	Build a model of the major circulatory routes.
30.09	Analyze risks for cardiovascular disease.
31.0	Using knowledge of power and movement in the human body, describe how the body fuels and responds to exercise. – The student will be able to:
31.01	Explain the human body's ability to generate ATP for the specific time period needed to fuel itself.
31.02	Assess muscle fatigue through interpretation of EMG and grip strength.
31.03	Design an experiment to test and analyze muscle fatigue.
31.04	Describe how the major body systems respond to exercise.
31.05	Understand how a training plan is designed for a fictional client, incorporating the specific health situation of the client.
31.06	Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.
32.0	Describe the structure and function of the integumentary system. – The student will be able to:
32.01	Classify the various degrees of burns and determine which layers of skin have been damaged for each.
32.02	Explain how burns impact the normal function of the skin and how the damage disrupts homeostasis in the body.
32.03	Explain how the body senses and responds to pain.
32.04	Explain why pain is necessary to human survival.
32.05	Determine the structures that have been damaged following a burn to the skin.
32.06	Analyze the rehabilitation a burn victim must undergo and the impacts it will have on activities of daily living.
33.0	Describe the composition of bones and how the skeletal system serves as a protection for the human body. – The student will be able to:
33.01	Describe and compare the structure and function of compact and spongy bone.
33.02	Describe the different types of bone fractures.
33.03	Identify bone fractures on x-rays and describe possible damage to internal organs.

## CTE Standards and Benchmarks

33.04	Describe the roles of calcitonin and parathyroid hormone in the human body
33.05	Describe the stages of bone remodeling.
33.06	Identify lifestyle choices that affect development and maintenance of healthy bones.
34.0	Describe the composition the immune system and how it serves as a protection for the human body. – The student will be able to:
34.01	Describe the structure and function of the lymphatic and immune system.
34.02	Describe the roles of antigens and antibodies.
34.03	Explain the role of blood cells in specific immunity.
34.04	Understand how a pedigree can assist in determining blood types in a family.
34.05	Interpret data on antibody concentrations after an infection.
34.06	Determine potential blood donors for a transfusion through the analysis of blood types and Rh compatibility.
35.0	Analyze how various external factors require body systems to work together to maintain health and homeostasis. – The student will be able to:
35.01	Describe how various body systems respond to extreme external changes in the external environment.
35.02	Explain how body systems work together to maintain homeostasis and complete basic functions.
35.03	Understand how initial symptoms of an illness can lead to diagnosis and treatment.
35.04	Evaluate objective data to create a patient case study.
35.05	Understand that different diseases require different medical interventions.
35.06	Research the role of various medical professionals who will diagnose and treat a fictional patient.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Medical Interventions  
**Course Number:** 8708130  
**Course Credit:** 1

**Course Description:**

Students investigate the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a “How-To” manual for maintaining overall health and homeostasis in the body as students explore: how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Through these scenarios, students are exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

<b>CTE Standards and Benchmarks</b>	
36.0	Investigate the variety of interventions involved in the prevention, diagnosis and treatment of infectious disease. – The student will be able to:
36.01	Research various medical interventions and explain how these interventions help prevent, diagnose, and treat disease.
36.02	Define bioinformatics and explore how it is used in the collection, classification, storage, and analysis of biochemical and biological information.
36.03	Explain how bacteria can be identified using DNA sequencing.
36.04	Investigate the roles of diagnostic tests for infectious diseases.
36.05	Graphically organize connections between individuals in a fictitious disease outbreak.
36.06	Determine the concentration of infectious bacteria in simulated body fluids and identify infected patients using antibody-based diagnostic tests, such as ELISA assay.
37.0	Explore the factors that contribute to the effectiveness of antibiotics against infectious diseases. – The student will be able to:

## CTE Standards and Benchmarks

37.01	Analyze and describe the structure of a bacterial cell.
37.02	Investigate how antibiotics disrupt the physiological pathways that bacteria need to survive.
37.03	Explain how bacteria use adaptations to gain resistance to antibiotics.
37.04	Demonstrate one of the pathways through which bacterial cells transfer genes.
37.05	Use a model to simulate the effects of antibiotics on the population of bacteria during an infection.
38.0	Investigate the pathology of hearing loss as a detrimental effect of infectious disease. –The student will be able to:
38.01	Distinguish the properties of sound waves; including frequency and amplitude.
38.02	Explain the anatomy of the ear and create a model of the ear demonstrating how its structure relates to its function.
38.03	Identify diagnostic tests that assess and evaluate hearing loss.
38.03.01	Perform diagnostic tests to assess and evaluate hearing loss.
38.04	Research interventions and services available to aid those with hearing loss.
38.05	Investigate and debate the bioethical concerns related to the use of cochlear implant technology.
39.0	Explore vaccination as a mode of infectious disease prevention. – The student will be able to:
39.01	Explain how vaccines act as medical interventions to defend the body against infectious invaders.
39.02	Explore laboratory methods in which vaccines are produced.
39.03	Describe the structure and function of plasmids and explain their significance in genetic engineering.
39.04	Investigate the importance of epidemiologists and their impact on public health.
39.05	Describe how vaccines interact with the human immune system.
39.06	Interpret data from a disease outbreak to determine the course of the infection.
39.07	Explore general perspectives on the use of vaccinations.
40.0	Investigate the available types of genetic testing/screening and their ethical implications. – The student will be able to:
40.01	Describe genetic testing and how it is used to determine if someone has a genetic disorder.

## CTE Standards and Benchmarks

40.02	Explain how genetic counseling impacts a patient's health outcome.
40.03	Amplify a segment of DNA in the laboratory using the Polymerase Chain Reaction (PCR) procedure.
40.04	Use laboratory techniques such as DNA extraction, PCR, and restriction analysis to identify single base pair differences in DNA.
40.05	Utilize laboratory results to analyze the relationship between genotype and phenotype.
40.06	Analyze prenatal genetic screening results.
40.07	Describe the basics of proper prenatal care as well as specified medical interventions used to monitor a pregnancy.
40.08	Investigate how a person's ability to taste the chemical PCT, their phenotype, relates to their results from laboratory genetic testing their genotype.
41.0	Examine the current reproductive and genetic technology and discuss the future of medical interventions. – The student will be able to:
41.01	Explore how gene therapy can be used to treat genetic disorders.
41.02	Discuss and debate the safety and effectiveness of gene therapy.
41.03	Explore the various medical interventions parents have available to choose the sex of their future child, including sperm sorting and embryo selection by pre-implantation genetic diagnosis (PDG).
41.04	Discuss the possibility of reproductive cloning and the ethical concerns.
41.05	Evaluate and debate the potential impact of reproductive technology from moral, ethical and scientific perspectives.
42.0	Explore the diagnostic techniques and technology being used to better diagnose and understand cancer. – The student will be able to:
42.01	Investigate the physiology of cancer and discuss how cancerous cells differ from healthy cells.
42.02	Describe the different uses of x-rays, CT scans, and MRI scans.
42.03	Investigate what DNA microarrays measure and how this information is used to determine differences in gene expression between differing tissues samples.
42.04	Using statistical analysis, determine the similarities between gene expression patterns of multiple patients.
43.0	Explore the potential risk factors associated with cancer and the various situations which cause changes to DNA. – The student will be able to:
43.01	Describe the potential risk factors for different types of cancer as well as the ways to reduce the risk.
43.02	Explore some of the various cancer screening techniques that can be used to predict risk for developing cancer.
43.03	Investigate the risk factors of viruses and explain the role viruses' play as a risk factor for certain cancers.



## CTE Standards and Benchmarks

44.0 Investigate the treatments and therapies available to treat the physical, mental, and emotional effects of cancer. – The student will be able to:

44.01 Identify the major differences between chemotherapy and radiation therapy.

44.02 Describe how chemotherapy drugs interact with and destroy cancer cells.

44.03 Explore biofeedback therapy and how it is utilized to treat cancer and its symptoms.

44.04 Synthesize designs that advances and benefit prosthetic technology for those who have lost their limbs.

44.05 Explain how physical and occupational therapists help patients with disabilities and those recovering from surgery/injury.

45.0 Explore future medical interventions for cancer. – The student will be able to:

45.01 Discuss reasons why therapy drugs do not produce the same effect in all individuals.

45.02 Explain how SNP profiles factor into the decision to prescribe a specific medication.

45.03 Explore the field of pharmacogenetics and its contributions to the improvement of individualized patient treatment.

45.04 Research and present how cases of misuse and abuse have led to strict regulations of human participation in clinical trials.

45.05 Describe the importance of nanomedicine, particularly for cancer research and the development of medical interventions.

46.0 Explore the medical implications of proteins produced and purified in a laboratory setting. – The student will be able to:

46.01 Discuss the evolution of diagnosis and treatment of diabetes from the 1800s through today.

46.02 Explain the various aspects of the bacterial transformation process.

46.03 Define chromatography and how it is used to separate items in a mixture.

46.04 Interpret electrophoresis results to determine the molecular weight of specific proteins in a mixture.

46.05 Explore and discuss specific biomedical careers in the manufacturing of therapeutic proteins.

47.0 Investigate the epidemiology and therapeutic interventions of kidney failure. – The student will be able to:

47.01 Describe End Stage Renal Disease (ESRD) and how it is diagnosed.

47.02 Describe the physiological effects on the body when kidneys do not function properly and its impact on the production of red blood cells.

47.03 Explore the medical options for treatment for persons with ESRD including hemodialysis, peritoneal dialysis and kidney transplant.

## CTE Standards and Benchmarks

48.0	Explore the process, policies and procedures involved in organ transplantation. – The student will be able to:
48.01	Discuss factors to consider when deciding who should receive an organ transplant.
48.02	Describe the importance of blood and tissue matching for a successful organ transplant.
48.03	Describe the general steps involved in a live donor laparoscopic nephrectomy.
48.04	Compare the major similarities and differences between a heart and a kidney transplant.
48.05	Explain the most common ways members of the surgical transplant team work together to ensure a successful transplant.
49.0	Investigate how advances in medical knowledge and technology can aid in building a better human body for the future. – The student will be able to:
49.01	Explore how a variety of tissues and organs can be transplanted from one organism to another.
49.02	Describe the general process of how xenotransplantation and tissue engineering works, as well as potential risks, benefits, challenges and ethical/moral concerns.
49.03	Reflect on how current methods of medical intervention can be improved.
49.04	Describe how advancing medical knowledge and technology will enable scientists to delay the effects of aging and disease by enhancing the functions of the human body.
49.05	Design a potential “super” human using knowledge of the human body and available medical interventions.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Biomedical Innovation  
**Course Number:** 8708140  
**Course Credit:** 1

**Course Description:**

In this capstone course, students apply their knowledge and skills to answer questions or solve problems related to the biomedical sciences. Students design innovative solutions for the health challenges of the 21st century as they work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health

<b>CTE Standards and Benchmarks</b>	
50.0	Investigate biomedical problems related to clinical care by designing an effective emergency care center. – The student will be able to:
50.01	Evaluate the role that biomedical innovation plays in treating disease, reducing wait time and promoting efficient care in emergency room and emergency care centers.
50.02	Assess overall credibility of a website by analyzing its content.
50.03	Produce an effective presentation of scientific information by using oral communication skills and PowerPoint presentation.
50.04	Research and propose solutions to healthcare delivery problems in the 21 <sup>st</sup> century.
50.05	Design an innovative emergency medicine delivery system.
50.06	Demonstrate proficiency in using online search engines and journal databases to locate scientific articles.
51.0	Explore the variety of research study designs available and investigate how to set up and conduct valid and reliable studies. – The student will be able to:
51.01	Critique science data presented in popular media and compare this with data presented in scientific journals.
51.02	Analyze the results of experimental studies using knowledge of specified statistical analysis methods.
51.03	Design, conduct and analyze an experimental study to answer a question regarding one or more body systems.
51.04	Using at least three statistical fallacies, assume the role of an advertisement sales person selling a fictitious product.
51.05	Describe the various biomedical career fields related to clinical or research studies.

## CTE Standards and Benchmarks

52.0 Explore the process, knowledge and skills required to design a medical innovation. –The student will be able to:

52.01 Investigate the evolution of biomedical products.

52.02 Brainstorm ideas for a new biomedical product or methods to improve an existing product.

52.03 Discuss the role of the scientific design process and how it is significant to medical innovation.

52.04 Identify a problem related to the medical field and research the past and present solutions to this problem.

52.05 Examine possible design solutions to the selected problem, determine the best approach and develop a design proposal.

52.06 Design a marketing plan to pitch the chosen solution to potential investors.

53.0 Explore biomedical innovation through investigating water contamination. – The student will be able to:

53.01 List and describe multiple causes of water contamination.

53.02 Explain why water quality is a global issue.

53.03 Extrapolate on the cause of non-point source pollution and its implications.

53.04 Using knowledge of specific assays, interpret the results of various chemical and culture assays and identify specific contaminants found.

53.05 Research and propose solutions to prevent or treat water contamination.

53.06 Determine local potential hazards or sources of contamination of local water samples and research local and Internet resources to investigate the condition of the local water delivery system.

53.07 Research and report on the quality of the local water.

54.0 Evaluate a public health issue and combat the problem using knowledge of epidemiology, disease diagnosis and public health resources. – The student will be able to:

54.01 Discuss the significant role that epidemiologists and public health investigators play in a public health crisis.

54.02 Describe how to set-up case control and cohort studies.

54.03 Discuss how measures of association are used to illustrate the correlation between specific risk factors and the development of disease.

54.04 Calculate the measures of association used to assess risk in case control and cohort studies.

54.05 List and discuss the various components that may be involved in a public health intervention plan.

54.06 Determine the source of a mystery illness by examining evidence documents and data including laboratory results, imaging results, disease maps and molecular data.

## CTE Standards and Benchmarks

54.07	Research local, national and global health issues and analyze how culture, geographic location and access to health care affect health and wellness.
54.08	Write a grant proposal outlining an intervention plan for a particular public health issue.
54.09	Present and defend the proposed intervention plan to a professional audience.
55.0	Understand medical research and the process of writing a scientific grant. – The student will be able to:
55.01	Define and elaborate on what medical research is used for and how funding for it is obtained.
55.02	Explain the role of a grant in relation to medical research.
55.03	Understand the difference between what constitutes a credible source opposed to a non-credible source when conducting a literature search.
55.04	Distinguish between primary and secondary sources.
55.05	Discuss potential bias based on construct and funding sources of research.
55.06	Discuss the role of an IRB in ensuring safety of a research project prior to data initiation.
55.07	Understand and identify the process by which a grant is created and the principle components that are included in scientific grant proposals (i.e. abstract, specific aims, background and significance, preliminary data/progress, project description, resources, supplemental materials).
55.08	Prepare and present a detailed grant proposal for a research project that will impact a specific aspect of a disease or medical condition.
56.0	(Optional) Use modern molecular biology techniques to clone and transfer DNA. – The student will be able to:
56.01	Explain the structure and function of plasmids, and how they are used in genetic engineering.
56.02	Describe the role restriction enzymes and how they interact with plasmids.
56.03	Interpret plasmid maps to determine the results of specific digestions with restriction enzymes.
56.04	Explain how to assemble recombinant DNA and clone a gene of interest using bacterial cells.
56.05	Interpret gel electrophoresis results to determine the success of a cloning experiment.
56.06	Using the process of bacterial transformation, insert a new plasmid into bacterial cells.
56.07	Draw and label possible ligation products and describe digestion results for each product.
57.0	(Optional) Assuming the role of a medical expert, investigate a mysterious death using forensics autopsy techniques.–The student will be able to:

## CTE Standards and Benchmarks

57.01	Describe observations of the internal and external anatomy of a fetal pig.
57.02	Evaluate a fetal pig for any abnormalities that may have led to the pig's death.
57.03	Complete an autopsy report for the fetal pig.
57.04	Solve the cause of death for a fetal pig by assuming the role of a forensic pathologist.
57.05	Design a fictitious death scenario using knowledge of the human body.
57.06	Create fictitious documents including an autopsy report and medical history to illustrate clues left behind in a dead body.
57.07	Research and reflect on the various biomedical careers involved in forensic pathology and describe two of these careers in detail.
58.0	(Optional) Students work independently in an area of interest in the biomedical sciences and outline milestones in a long-term open ended problem using skills learned throughout the program to complete the project. – The student will be able to:
58.01	Choose a topic and describe work previously completed pertaining to that topic.
58.02	Interpret charts, graphs, data sets and any other information related to the project.
58.03	Utilize time and project management skills to complete the approved project in the time allotted.
58.04	Apply skills and knowledge of researching a topic, evaluating information and decision making in order to complete the project.
58.05	Write a well-constructed final report describing the purpose, procedures and results of the project and present this information orally.
58.06	Write a self-analysis of what was learned during the project with a focus on whether things should have been done differently or not.
58.07	Prepare a portfolio of all artifacts related to the project in order to demonstrate the work progression.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Academic Alignment**

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

### **Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition online.

## **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

This program uses a combination of activity-based, project-based and problem-based (APPB) learning styles to engage students.

Hands-on projects include designing experiments, investigating the structures and functions of body systems, and using data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respiratory operation. Using 3D imaging, data acquisition software, and current scientific research, students design a product that can be used as a medical intervention.

The capstone course gives student teams the opportunity to work with a mentor, identify a scientific research topic, conduct research, write a scientific paper, and defend team conclusions and recommendations to a panel of outside reviewers.

## **Career and Technical Student Organization (CTSO)**

Health Occupation Students of America is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.



## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education  
Curriculum Framework

**Program Title:** Florida Funeral Director  
**Career Cluster:** Health Science

CCC	
CIP Number	0312030102
Program Type	College Credit Certificate (CCC)
Program Length	31 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	39-4031 Morticians, Undertakers, and Funeral Directors

**Purpose**

This certificate program is part of the Funeral Services AS degree program (1312030100).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as Funeral Directors SOC Code 39-4031 Morticians, Undertakers, and Funeral Directors or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to mortuary administration, funeral law, public health and sanitation, stress management, employability skills, leadership and human relations skills, and health and safety.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Take care of the dead in a manner which recognizes the inherent dignity of human-kind.
- 02.0 Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure.
- 03.0 Interpret and communicate the purposes, procedures, and values of funeral services.
- 04.0 Counsel people regarding funeralization.
- 05.0 Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served.
- 06.0 Identify and comply with the laws pertaining to funeral service practice and public health.

Florida Department of Education  
Student Performance Standards

Program Title: Florida Funeral Director  
 CIP Number: 0312030102  
 Program Length: 31 credit hours  
 SOC Code(s): 39-4031

**This certificate program is part of the Funeral Services AS degree program (1312030100). At the completion of this program, the student will be able to:**

01.0	Take care of the dead in a manner which recognizes the inherent dignity of human-kind. – The student will be able to:
01.01	Give evidence of respect for human remains.
01.02	Demonstrate acceptance of racial and cultural diversity.
02.0	Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure. – The student will be able to:
02.01	Identify the privileges and their limitations accorded the licensee with regard to caring for the dead, and serving the living.
02.02	Identify the responsibilities of the funeral director to those who have called him with regard to:
02.02.01	Providing services and merchandise as selected.
02.02.02	Explaining the financial aspects of the funeral, and pricing method used.
02.02.03	Explaining death benefits and/or burial allowances.
02.02.04	Notifying the clergy of the death, if appropriate.
02.02.05	Coordinating with the clergy on religious aspects of the funeral.
02.02.06	Explaining merchandise and related representations regarding final disposition.
02.02.07	Preparing a Statement of Goods and Services Selected pertaining to services, selected merchandise, supplemental items and cash advances.
02.02.08	Explaining applicable laws, rules and regulations.
02.02.09	Referring families for professional counseling as appropriate.
02.03	Identify the responsibilities of the funeral director to the profession with regard to:
02.03.01	Costs, procedures, and communication when transferring human remains to another funeral establishment.
02.03.02	Public education regarding funeralization.
02.04	Identify the responsibilities of the funeral director to the clergy in the matter of the policies, rules and regulations of religious organizations.

02.05	Perform the following tasks applicable to the state in which he/she intends to gain a license:
02.05.01	State the limitations placed upon the practice of the funeral director/embalmer.
02.05.02	Summarize the law, rules and regulations pertaining to:
02.05.02.01	The transportation of the dead.
02.05.02.02	Requirements and specifications of the funeral home, including the preparation room.
02.05.02.03	Define terms specified in the license laws, rules and regulations.
02.05.02.04	Identify the qualifications required of applicants for funeral director/mortician license.
02.05.02.05	Identify the grounds for issuance, revocation, suspension or refusal to renew or issue licenses.
02.05.02.06	Identify requirements for the conducting of funerals.
02.05.02.07	Identify the procedures for filing a complaint concerning a violation of the licensing law.
02.05.02.08	Identify provisions regarding reciprocity, endorsement and emergency licensing.
03.0	Interpret and communicate the purposes, procedures, and values of funeral services. – The student will be able to:
03.01	Identify the purposes which the funeral serves for the family, friends, church, occupational associates, and community of the deceased.
03.02	Identify the values of the funeral.
03.03	Define common terms used in funeral services.
03.04	Identify the psychological purposes and values of the funeral.
03.05	Identify the sociological purposes and values of the funeral.
03.06	Organize and be prepared to discuss the purposes and values of the funeral.
03.07	Identify the philosophical purposes and values of funeral service.
04.0	Counsel people regarding funeralization. – The student will be able to:
04.01	Identify the major financial considerations that confront a bereaved family.
04.02	Identify the times or situations during which a funeral director will make use of counseling.
04.03	State the areas of counseling normally covered during funeralizations.
04.04	Describe the process of funeralization.
04.05	Describe contemporary opinions regarding psychology of death, grief, and bereavement.
04.06	Describe how the manner and cause of death affects the psychological needs of the bereaved.
04.07	List the information of importance to obtain during each type of counseling situation.
04.08	Identify and appraise the basic personal and personality problems that may appear during counseling situations.

04.09	Classify and analyze the various forms of funeral rites.
04.10	Describe contemporary opinions regarding sociology of death, grief, and bereavement.
04.11	Describe three or more types of counseling techniques applicable to funeral services and give reasons for the use of each in individual circumstances.
04.12	Describe recent developments pertaining to the theologies of death, grief and bereavement.
04.13	Describe the effects of the Uniform Anatomical Gift Act on funeralization.
04.14	Identify and describe stages of dying.
05.0	Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served. – The student will be able to:
05.01	Develop a warm, friendly and tactful attitude towards the family at the first meeting.
05.02	Identify the items of information which are necessary to complete the following forms:
05.02.01	Obituary
05.02.02	Death certificate via the Electronic Death Registration System (EDRS)
05.02.03	Social Security forms (SSA, 719, SSA 721)
05.02.04	Veteran's forms (Marker, Flag, Burial Allowance)
05.02.05	Burial/Transportation permits
05.02.06	Release/Authorization forms
05.03	Identify the person(s) who are qualified to give permission for release of the deceased from a hospital, or to sign the hospital death record, if required.
05.04	Identify the information to be secured from, and given to, the family upon initial family contact.
05.05	Describe the multiple steps required between initial notification of death and removal of the deceased.
05.06	Identify person(s) who qualify to authorize autopsy and embalming, and to approve the purpose and disclosure statement.
05.07	Identify the items and considerations usually included in the arrangement conference.
05.08	Identify the types of death certificates and their uses.
05.09	Identify the appropriate times usually considered necessary to meet the funeral needs of those being served.
05.10	Identify the consideration normally involved in setting the order for the processional and recessional of a funeral service including casket, casket bearer, children, clergy, friends, fraternal orders, funeral directors, honorary bearers, next of kin, relatives, and service organization.
05.11	Describe the multiple steps required between initial notification of death and removal of the deceased when the bereaved are not present at the time of death, regardless of the place or manner of death - including, but not limited to, the funeral director's determination of the need for a personal conference and/or counseling of the bereaved prior to the funeral arrangement conference.

05.12	Identify the items of clothing ordinarily required for the deceased.
05.13	Describe the proper techniques and equipment employed in the dignified removal of remains under diverse conditions.
05.14	Identify the reasons which require a discussion involving the family, the officiating clergyman, and the funeral director regarding visitation hours, time of funeral, and other aspects of the service.
05.15	Identify the purpose of the Burial-Transit Permit.
05.16	Write obituary and death notices.
05.17	Identify the purpose and content of pre-selection counseling.
05.18	Identify the participants functioning in funeral service and explain their duties.
05.19	Describe considerations involved in the dignified movement of casketed remains.
05.20	State considerations for determining the order of the funeral procession.
05.21	Coordinate a variety of committal rites when these are a part of a funeral.
05.22	Identify the psychological and sociological value of the funeral arrangement conference.
05.23	Identify methods of dealing with inter-personal conflicts among family members.
05.24	Discuss dismissal procedures for leaving the grave site.
05.25	Explain the problems involved in harmonizing the colors of caskets in the funeral setting.
05.26	Describe the various types of floral arrangements and the considerations involved in their placement.
05.27	Identify requirement/procedure pertaining to cremation, calcination and burial at sea.
06.0	Identify and comply with the laws pertaining to funeral service practice and public health. – The student will be able to:
06.01	Identify legally:
06.01.01	The basis of a funeral director's liability for the negligence of a volunteer driver in a funeral procession.
06.01.02	The legal duty of a funeral director regarding permits required by law.
06.01.03	The duty of the funeral director for compliance with the Federal Trade Commission Funeral Rules.
06.01.04	The duty of the funeral director for compliance with the Magnuson-Moss Warranty Act (1975).
06.01.05	The duty of the funeral director for compliance with the provisions of Federal Wage and Hour Laws.

06.02 Describe status of a funeral bill as a charge against the estate.

06.03 Identify:

06.03.01 The conditions under which a funeral director must have permission before permitting an autopsy in their establishment, and state whether that permission may be qualified, restricted or revoked.

06.03.02 The legal duty of the funeral director regarding the personal effects of a decedent.

06.03.03 The extent of control a funeral director has over a funeral, and their legal duties to those attending a funeral or viewing a body at their funeral home.

06.03.04 Why a funeral director should be familiar with the law of disinterment.

06.03.05 The circumstances under which exhumation is permitted in criminal cases, and in civil cases.

06.03.06 The liability of the funeral director for the custody of the remains.

06.04 Identify:

06.04.01 The proper position the funeral director should take when survivors of a decedent disputes the exercise of the right of disposition.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

#### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Biotechnology Laboratory Specialist  
**Career Cluster:** Health Science

CCC	
CIP Number	0341010101
Program Type	College Credit Certificate (CCC)
Program Length	30 credit hours
CTSO	HOSA: Future Health Professionals; Skills USA
SOC Codes (all applicable)	19-4021 Biological Technicians

**Purpose**

This certificate program is part of the Biotechnology Laboratory Technology AS degree program (1341010100).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program offers a sequence of Biotechnology, Chemistry, Statistics, and Health courses providing sound workforce content along with both academic preparation and industry-standard technical skills needed to advance education and careers in the biotechnology career cluster. This certificate provides for development of technical ability, including competency-based applied learning to develop and enhance academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the biotechnology career cluster.

The content includes but is not limited to broad biology and chemistry concepts, statistical analysis, documentation procedures, basic and advanced laboratory techniques and concepts, working in a regulated environment, and biohazard and safety procedures

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate communication skills.
- 02.0 Demonstrate safety skills.
- 03.0 Demonstrate basic laboratory skills.
- 04.0 Demonstrate regulatory compliance.
- 05.0 Demonstrate appropriate decision making and problem solving techniques.
- 06.0 Demonstrate specific laboratory skills.
- 07.0 Demonstrate quality assurance/control.
- 08.0 Maintain facility and equipment.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Biotechnology Laboratory Specialist  
**CIP Number:** 0341010101  
**Program Length:** 30 credit hours  
**SOC Code(s):** 19-4021

**This certificate program is part of the Biotechnology Laboratory Technology AS degree program (1341010100). At the completion of this program, the student will be able to:**

01.0 Demonstrate communication skills. - The student will be able to:

01.01 Make professional oral and written presentations.

01.02 Comprehend and use correct scientific, technical and medical vocabulary.

01.03 Follow/analyze experimental and laboratory protocols.

01.04 Prepare identify and apply changes to control procedures.

01.05 Write or update manuals, SOP's protocols, reports and technical summaries.

01.06 Keep accurate laboratory records in notebooks or other approved mediums.

01.07 Perform computerized research and web searches, including, but not limited to Pub Med and identify basic reference resources in biotechnology, including, but not limited to original journal articles.

01.08 Recognize differences between primary scientific references and secondary information sources.

01.09 Perform basic applications in word processing, spread sheets, databases, presentations and project management.

01.10 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.

02.0 Demonstrate safety skills. - The student will be able to:

02.01 Identify and maintain first aid supplies, eye wash station, emergency shower, co-worker contact, medical information, emergency protection, chemical hygiene plan and evacuation plan.

02.02 Follow correct safety procedures, guidelines and chemical hygiene plans.

02.03 Maintain required environmental health, safety, and laboratory training.

02.04 Handle, store, and dispose of hazardous materials per appropriate MSDS, other safety guidelines, Worker Protection Standards

	(WPS) and/or appropriate regulatory guidelines (i.e., state, federal, local, accreditation, etc.).
02.05	Follow standard precautions for biological pathogen, both proper handling and disposal, and define principles of contamination control including standard and transmission based precautions.
02.06	Demonstrate procedures for declaring a laboratory emergency and/or responding with appropriate institutional procedures.
03.0	Demonstrate basic laboratory skills. - The student will be able to:
03.01	Obtain and read protocol, test procedure, standard operating procedure (SOP), equipment manuals, and proper forms.
03.02	Prioritize and perform multiple tasks in a timely manner, based upon priorities communicated by supervisor.
03.03	Clean, organize and sterilize materials and laboratory instruments, when required.
03.04	Organization of supply inventory; date/label reagents and store promptly upon arrival.
03.05	Demonstrate knowledge of asepsis and practice procedures such as hand-washing and isolation.
03.06	Use titration/pipetting techniques; measure volume/weights.
03.07	Perform basic calculations, unit conversions, graphing of data and statistical analysis.
03.08	Calculate and prepare dilutions series.
03.09	Prepare solutions and reagents for laboratory use.
03.10	Monitor physical properties of reagents, buffers, media and solutions and determine optimum conditions for use.
03.11	Obtain and review appropriate procedures and test forms, prepare for laboratory inspections and respond to the reports.
03.12	Collect and set up samples for analysis.
03.13	Perform general laboratory tests, including, setup equipment and perform/document tests and results.
03.14	Demonstrate knowledge of chemical cross-contamination control between reagents from weighing implements, storage containers and media.
03.15	Make estimations and approximations and judge the reasonableness of the result.
04.0	Demonstrate regulatory compliance. - The student will be able to:
04.01	Follow guidelines from the appropriate regulatory, accreditation, and/or certification agencies, such as FDA, OSHA, USDA, NIH, NR, DOT, EPA, CDC, ISO/IEC, and NRC.
04.02	Comply with principles using current Good Experimental Practices and quality improvement systems (e.g., GXP; GLP, GMP, GCP)
05.0	Demonstrate appropriate decision making and problem solving techniques. - The student will be able to:

05.01	Identify decision to be made and compare alternatives.
05.02	Make decisions based on accurate facts, data, and agreed-upon goals.
05.03	Evaluate the decision made.
05.04	Demonstrate ability to evaluate data and draw conclusions.
05.05	Diagnose problem, its urgency and causes, and documenting as appropriate.
05.06	Determine appropriate action, implement it, and evaluate results.
06.0	Demonstrate specific laboratory skills. - The student will be able to:
06.01	Perform various techniques associated with mammalian and/or insect cell culture, including isolation, maintenance, characterization, and storage of pure cultures.
06.02	Perform microbiology skills, which may include but are not limited to, plating techniques, isolating and characterizing cell lines, propagating cell lines, and cryogenic techniques.
06.03	Perform various genetic engineering techniques including but not limited to, transformation, transfection of mammalian, insect, and/or bacterial cells.
06.04	Perform bioassays.
06.05	Perform immunological techniques, including but not limited to, enzyme-linked immunosorbent assays, use of monoclonal and polyclonal antibodies, and Western blot techniques.
06.06	Perform various molecular biology techniques, including but not limited to isolation, quantitation, amplification, electrophoresis, and hybridization of both RNA and DNA and construction of recombinant vectors.
06.07	Demonstrate an understanding of translation assays, DNA libraries and isotopic and non-isotopic labeling techniques.
06.08	Perform various protein techniques including but not limited to, separation, isolation, characterization, quantitation, monitoring protein stability, gel electrophoresis, concentration (filter and dialyze), and conduct enzyme activity assays.
06.09	Perform chemical assays including but not limited to measuring turbidity, viscosity, density, quantitative analysis, distillation techniques, titration techniques, employing dyes and indicators, lyophilization, and organic chemistry techniques.
06.10	Demonstrate knowledge of instrument-based separation, including but not limited to various chromatography techniques and other separation methodologies (e.g., FACS).
06.11	Understand the principles underlying spectroscopic analysis.
07.0	Demonstrate quality assurance control. - The student will be able to:
07.01	Perform quality tests and document results.
07.02	Verify test standards and maintain QA records.
07.03	Archive samples and documents.

07.04	Inspect and verify integrity of product, procedure, and specimen.
07.05	Explain the role of statistical trend analysis for the release of final product.
07.06	Investigate complaints and take corrective action.
08.0	Maintain facility and equipment. - The student will be able to:
08.01	Monitor/record the environmental condition of the facility (e.g., growth chamber, laboratory, greenhouse, storage room, animal room, freezers, or manufacturing site).
08.02	Notify appropriate personnel if sampling indicates a problem.
08.03	Clean work area according to SOPs.
08.04	Label equipment.
08.05	Check calibration and perform systems diagnostics
08.06	Check and maintain equipment, logs, and perform preventative maintenance tasks according to schedule and operate laboratory equipment and instrumentation after familiarization with manuals and/or training.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program is designed to prepare students for employment as Biotechnology Research Technicians, Biological Technicians (SOC Code 19-4021) or cell culture technicians or biotechnology manufacturing technician and/or to supply supplemental training for persons previously or currently employed in these occupation

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals and Skills USA are the intercurricular career and technical student organizations providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Assisting Technology and Management  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	<b>College Credit</b>	<b>Clock Hour Program</b>
Program Number	N/A	H170113
CIP Number	0351060108	0351060113
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	50 credit hours	1230 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9091 Dental Assistants 31-9099 Healthcare Support Workers, All Other	31-9091 Dental Assistants 31-9099 Healthcare Support Workers, All Other
Basic Skills Level:	N/A	Mathematics 10 Language 10 Reading 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as dental assistants 66002 (SOC code 31-9091), educational managers for dental companies, and dental assisting educators. The program will prepare students for the Dental Assisting National Board Examination as well as state requirements. The program should meet the requirements of the Commission on Dental Accreditation of the American Dental Association and standards recommended by the Florida Board of Dentistry

The content includes but is not limited to, dental office and patient management, basic dental laboratory procedures, dental and general anatomy, dental terminology, nutrition, dental instrument and equipment utilization, microbiology, dental pharmacology and anesthesia, chairside assisting and expanded functions, dental office emergencies/CPR, dental radiography, maintenance and asepsis of dental operatory and instrumentation,

dental specialty procedures, employability skills, leadership and human relations skills, ethics and jurisprudence, dental materials and preventive dentistry.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

**Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 3 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	DEA0725	Introduction to Dental Assisting	90 hours	31-9099
B	DEA0726	Dental Infection Control Assistant	210 hours	31-9099
C	DEA0727	Dental Assisting 1	465 hours	31-9091
	DEA0728	Dental Assisting 2	465 hours	

**College Credit**

When offered at the college credit level, this ATD program is part of the Dental Assisting Technology and Management AS (1351060104) and has a program length of 50 credits.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the dental health care delivery system and dental health occupations.
- 02.0 Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas.
- 03.0 Describe the legal and ethical responsibilities of the dental health care worker.
- 04.0 Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts.
- 05.0 Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Use information technology tools. (Optional)
- 08.0 Explain the importance of employability skills.
- 09.0 Demonstrate knowledge of airborne and blood borne diseases.
- 10.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 11.0 Use dental terminology.
- 12.0 Identify structures and explain functions and pathologies of dental and general head and neck anatomy.
- 13.0 Identify principles of microbiology and disease prevention and perform infection control procedures.
- 14.0 Identify, describe, maintain and utilize dental instruments and equipment.
- 15.0 Record patient assessment and treatment data.
- 16.0 Identify the functions of pharmacology and anesthesia as they relate to dentistry.
- 17.0 Identify and perform dental radiographic procedures.
- 18.0 Identify properties and uses, and manipulate dental materials.
- 19.0 Perform chairside assisting for general dentistry and specialty procedures.
- 20.0 Describe principles and perform techniques of preventive dentistry.
- 21.0 Perform general dental business office procedures.
- 22.0 Demonstrate professionalism as a dental team member in the clinical setting.

Florida Department of Education  
Student Performance Standards

**Program Title: Dental Assisting Technology and Management – ATD**  
**Career Certificate Program Number: H170113**

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

<b>Course Number: DEA0725</b>	
<b>Occupational Completion Point: A</b>	
<b>Introduction to Dental Assisting – 90 Hours – SOC Code 31-9099</b>	
01.0	Demonstrate knowledge of the dental health care delivery system and dental health occupations. – The student will be able to:
01.01	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.
01.02	Describe the various types of dental health care providers and the range of services available.
01.03	Describe the composition and functions of a dental health care team.
01.04	Identify the general roles and responsibilities of the individual members of the dental health care team.
01.05	Identify the roles and responsibilities of the consumer within the dental healthcare system.
01.06	Explain the cause and effects of factors that influence the current delivery system of dental healthcare.
01.07	Discuss the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.
01.08	Discuss the history of dentistry.
02.0	Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas. – The student will be able to:
02.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Compose written communication using correct spelling, grammar, formatting and confidentiality and specific formats of letter writing.
02.05	Recognize components of medical and dental terminology and abbreviations.
02.06	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal

	relationships.
02.07	Recognize the importance of patient education regarding dental and health care.
02.08	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.09	Identify psychological considerations influencing communication and behaviors.
03.0	Describe the legal and ethical responsibilities of the dental health care worker. – The student will be able to:
03.01	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC and Rule 64B5-25 FAC applicable to practice by the dental health workers.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment. and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the patients' "Bill of Rights".
03.06	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA) and apply these standards to social media.
03.07	Distinguish between expressed, implied, and informed consent.
03.08	Explain the laws governing harassment, labor and employment.
03.09	Differentiate between legal and ethical issues in dentistry.
03.10	Describe a Code of Ethics consistent with the dental assisting profession.
03.11	Identify and compare personal, professional and organizational ethics.
03.12	Recognize the limits of authority and responsibility of dental health care workers including legislated scope of practice.
03.13	Recognize and report illegal and/or unethical practices of dental health care workers.
03.14	Recognize and report abuse including domestic violence and neglect.
03.15	Identify resources to victims of domestic violence.
03.16	Explain risk management.
04.0	Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts. – The student will be able to:
04.01	Develop a basic understanding of the structure and function of the body systems.

04.02	Identify common disorders related to each of the body systems.
04.03	Explain basic concepts of positive self-image, wellness, and stress.
04.04	Develop a wellness and stress control plan that can be used in personal and professional life.
05.0	Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
05.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
05.02	Identify and describe methods in medical error reduction and prevention in the dental healthcare setting.
05.03	Demonstrate an understanding of personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.04	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
05.05	Demonstrate procedures for the safe transport and transfer of patients.
05.06	Describe fire safety, disaster, and evacuation procedures.
05.07	Explain emergency procedures to follow in response to workplace accidents.
05.08	Demonstrate handwashing and the use of personal protective equipment used in dentistry.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Take and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain certification in basic life support (BLS), cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
07.0	Use information technology tools. (Optional) – The student will be able to:
07.01	Define terms and demonstrate basic computer skills.
07.02	Interpret information from electronic medical documents.
08.0	Explain the importance of employability skills. – The student will be able to:
08.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
08.02	Exemplify basic professional standards of dental healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
08.03	Prepare and maintain a professional portfolio to document knowledge, continued education, skills, and experience. (Optional)

08.04	Write an appropriate resume.
08.05	Conduct a job search and complete a job application form correctly.
08.06	Demonstrate competence in job interview techniques.
08.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environment and career growth potential.
08.08	Examine licensing, certification, and industry credentialing requirements.
09.0	Demonstrate knowledge of airborne and blood borne diseases. – The student will be able to:
09.01	Recognize emerging diseases and disorders.
09.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by airborne and blood borne pathogens.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by airborne and blood borne pathogens and the public education necessary to combat the spread of these diseases.
09.04	Identify community resources and services available to the individuals with diseases caused by airborne and blood borne pathogens.
09.05	Apply infection control techniques designed to prevent the spread of diseases caused by airborne and blood borne pathogens to the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.
09.06	Demonstrate knowledge of the legal aspects of AIDS, including testing.
10.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
10.01	Analyze attributes and attitudes of an effective leader to include emotional intelligence.
10.02	Recognize factors and situations that may lead to conflict.
10.03	Demonstrate effective techniques for managing team conflict.

**Course Number: DEA0726**  
**Occupational Completion Point: B**  
**Dental Infection Control Assistant – 210 Hours – SOC Code 31-9099**

11.0	Use dental terminology. -- The student will be able to:
11.01	Identify and define common dental terms.
11.02	Demonstrate the use of proper dental terminology in the dental environment.
12.0	Identify structures and explain functions and pathologies of dental and general head and neck anatomy. -- The student will be able to:
12.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, lymph nodes, nerves,

	and blood vessels.
12.02	Identify embryonic development of head, oral cavity, and teeth.
12.03	Identify teeth and their landmarks, and the morphological characteristics of each individual tooth.
12.04	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
12.05	Recognize and describe oral pathological conditions, related to the teeth and their supporting structures.
12.06	Recognize and describe developmental anomalies related to the teeth, face, and oral structures.
12.07	Describe and differentiate between normal and malocclusion.
12.08	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the oral cavity.
13.0	Identify principles of microbiology and disease prevention and perform infection control procedures. -- The student will be able to:
13.01	Differentiate between pathogenic and non-pathogenic microorganisms.
13.02	Describe pathogens and modes of disease transmission.
13.03	Differentiate between aseptic and non-aseptic environments.
13.04	Describe and apply methods of cleaning, disinfection, and sterilization.
13.05	Identify chemicals and their uses for controlling the spread of disease in the dental environment.
13.06	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.
13.07	Describe the duties of the dental office safety coordinator.
13.08	Demonstrate compliance with the OSHA Blood Borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.
13.09	Identify and manage hazardous chemicals and biomedical wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200), 64E-16 F.A.C., and Environmental Protection Agency regulations.
13.10	Define principles of infection control including standard and transmission based precautions.
13.11	Demonstrate knowledge of dental asepsis.
13.12	Implement appropriate hand hygiene procedures and use of protective barriers.
13.13	Demonstrate knowledge of surgical asepsis and isolation.
14.0	Identify, describe, maintain and utilize dental instruments and equipment.--The student will be able to:



14.01	Identify various types, functions and operations of dental operator and laboratory equipment.
14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
14.03	Maintain dental operator equipment and instruments.
14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
14.05	Seat and dismiss patients.
14.06	Operate oral evacuation devices and air/water syringe.
14.07	Maintain a clear field of vision including isolation techniques.
14.08	Perform a variety of instrument transfers to include four-handed dentistry.
14.09	Utilize appropriate chairside assistant ergonomics.
14.10	Assist with and place dental dams as permitted by Florida Statute and Florida Board of Dentistry Rule.

**Course Number: DEA0727**  
**Occupational Completion Point: C**  
**Dental Assisting 1 – 465 Hours – SOC Code 31-9091**

15.0	Record patient assessment and treatment data. -- The student will be able to:
15.01	Take and record medical-dental histories.
15.02	Record assessment of existing oral conditions.
15.03	Perform intraoral and extraoral photography.
15.04	Record conditions diagnosed by the dentist.
15.05	Record treatment-related data on the patient's clinical record.
15.06	Record treatment plan and treatment in patient's chart.
15.07	Perform a visual assessment of existing oral conditions.
15.08	Distinguish between and report subjective and objective information.
15.09	Report relevant information in order of occurrence.
16.0	Identify the functions of pharmacology and anesthesia as they relate to dentistry. -- The student will be able to:

16.01	Identify drug requirements, agencies, and regulations including prescribing regulations related to medications subject to addiction.
16.02	Distinguish among the five schedules of controlled substances.
16.03	Record a drug prescription in a patient's chart.
16.04	Utilize ratios and proportional problems to calculate prescribed drug dosages.
16.05	Identify drug actions, side effects, indications and contraindications; verify with Physician's Desk Reference (PDR) or its equivalent.
16.06	Identify common drugs used in dentistry.
16.07	Prepare and apply topical anesthetic agent.
16.08	Identify properties of anesthetics.
16.09	Prepare syringes for the administration of local anesthetics.
16.10	Monitor and identify precautions in the use of nitrous oxide-oxygen conscious sedation.
16.11	Calculate the percentage of nitrous oxide-oxygen delivered during a conscious sedation procedure.
16.12	Identify drugs and agents used for treating dental-related infection.
16.13	Identify and respond to dental office emergencies.
16.14	Describe the signs and symptoms of drug addiction.
16.15	Discuss the dental team's responsibility to recognize patients with drug addictions.
17.0	Identify and perform dental and carpal radiographic procedures -- The student will be able to:
17.01	Describe history, physics and biological effects of ionizing radiation.
17.02	Identify parts of the X-ray machine including accessories.
17.03	Demonstrate radiologic health protection techniques.
17.04	Describe dark room/processing procedures, mix solutions.
17.05	Describe the proper disposal of hazardous radiographic waste.
17.06	Place and expose dental radiographic films or phosphors and digital sensors.
17.07	Perform extraoral radiography as required for dental diagnostic procedures.

17.08	Identify radiographic anatomical landmarks and pathologies.
17.09	Mount radiographic surveys.
17.10	Describe how to maintain unexposed film inventory and storage.
17.11	Maintain digitally acquired radiographic images.
17.12	Practice infection control procedures for all radiographic procedures.
18.0	Identify properties and uses, and manipulate dental materials. -- The student will be able to:
18.01	Identify properties and uses and manipulate gypsum.
18.02	Identify properties and uses and manipulate restorative materials.
18.03	Identify properties and uses and manipulate dental cements.
18.04	Place and remove matrices as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.05	Place and remove temporary restorations as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.06	Identify properties and uses and manipulate impression materials.
18.07	Make intraoral impressions as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.08	Identify properties and uses and manipulate acrylics and thermoplastics.
18.09	Identify properties and uses and manipulate waxes.
18.10	Perform dental laboratory procedures to include the fabrication of casts, custom trays, whitening trays, temporary crowns, and bridges.
18.11	Identify and manage hazardous dental materials and wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200) and Environmental Protection Agency regulations.
18.12	Employ measurements of time, temperature, distance, capacity, and mass/weight during the manipulation of dental materials.
19.0	Perform chairside assisting for general dentistry and specialty procedures. -- The student will be able to:
19.01	Describe procedures, equipment, materials, and instrumentation used in the dental specialties to include but not limited to periodontics, endodontics, pedodontics, oral surgery, orthodontics, and prosthodontics.
19.02	Assemble tray set-ups for general and specialty dental procedures.
19.03	Assist in general and specialty dental procedures.
19.04	Describe the special needs of patients during dental procedures.

19.05 Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.

19.06 Describe procedures, equipment, and materials utilized in digital dentistry to include CAD/CAM Technology.

**Course Number: DEA0728**  
**Occupational Completion Point: C**  
**Dental Assisting 2 – 465 Hours – SOC Code 31-9091**

20.0 Describe principles and perform techniques of preventive dentistry. -- The student will be able to:

20.01 Describe the process of oral biofilm formation and its management through preventative dentistry.

20.02 Provide patient preventive education and oral hygiene instruction.

20.03 Prepare and set up for various preventive procedures.

20.04 Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.

20.05 Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.

20.06 Clean and polish removable dental appliances.

20.07 Apply dental sealants as permitted by Florida Statute and Florida Board of Dentistry Rule.

20.08 Identify the elements of nutrition, basic food groups, and acceptable diets as recommended by the U.S. Department of Agriculture.

20.09 Identify dietary deficiencies and dietary practices that contribute to the manifestation of symptoms in the oral cavity.

20.10 Identify community dental resources and services available.

21.0 Perform general dental business office procedures. -- The student will be able to:

21.01 Maintain appointment control.

21.02 Maintain an active recall system.

21.03 Prepare and maintain accurate patient records.

21.04 Prepare and maintain patient financial records, collect fees.

21.05 Demonstrate the use of dental procedure codes and current terminology when preparing and managing insurance claims.

21.06 Differentiate the different categories of dental procedure codes.

21.07 Prepare and maintain office financial records.

21.08	Prepare and maintain dental office inventory control and purchasing.
21.09	Demonstrate public relations responsibilities of the secretary/receptionist.
21.10	Demonstrate skills on office equipment.
21.11	Maintain the dental business office environment.
21.12	Receive and dismiss patients and visitors.
21.13	Demonstrate appropriate patient management/customer service skills.
21.14	Describe the effect of money management on practice goals.
22.0	Demonstrate professionalism as a dental team member in the clinical setting. – The student will be able to:
22.01	Perform dental assisting duties, dental assisting expanded functions, and dental radiographic procedures in a clinical setting under the direct supervision of a licensed dentist.
22.02	Interact with a professional dental team in the delivery of patient services.
22.03	Utilize employability skills.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Dental Assisting Technology and Management – ATD  
**ATD CIP Number:** 0351060108  
**SOC Code(s):** 31-9091

When this program is offered at the college level, the following standards and benchmarks apply:

01.0	Demonstrate knowledge of the dental health care delivery system and dental health occupations. – The student will be able to:
01.01	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.
01.02	Describe the various types of dental health care providers and the range of services available.
01.03	Describe the composition and functions of a dental health care team.
01.04	Identify the general roles and responsibilities of the individual members of the dental health care team.
01.05	Identify the roles and responsibilities of the consumer within the dental healthcare system.
01.06	Explain the cause and effects of factors that influence the current delivery system of dental healthcare.
01.07	Discuss the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.
01.08	Discuss the history of dentistry.
02.0	Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas. – The student will be able to:
02.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Compose written communication using correct spelling, grammar, formatting and confidentiality and specific formats of letter writing.
02.05	Recognize components of medical and dental terminology and abbreviations.
02.06	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
02.07	Recognize the importance of patient education regarding dental and health care.

02.08	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.09	Identify psychological considerations influencing communication and behaviors.
03.0	Describe the legal and ethical responsibilities of the dental health care worker. – The student will be able to:
03.01	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC and Rule 64B5-25 FAC applicable to practice by the dental health workers.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment. and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the patients' "Bill of Rights".
03.06	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA) and apply these standards to social media.
03.07	Distinguish between expressed, implied, and informed consent.
03.08	Explain the laws governing harassment, labor and employment.
03.09	Differentiate between legal and ethical issues in dentistry.
03.10	Describe a Code of Ethics consistent with the dental assisting profession.
03.11	Identify and compare personal, professional and organizational ethics.
03.12	Recognize the limits of authority and responsibility of dental health care workers including legislated scope of practice.
03.13	Recognize and report illegal and/or unethical practices of dental health care workers.
03.14	Recognize and report abuse including domestic violence and neglect.
03.15	Identify resources to victims of domestic violence.
03.16	Explain risk management.
04.0	Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts. – The student will be able to:
04.01	Develop a basic understanding of the structure and function of the body systems.
04.02	Identify common disorders related to each of the body systems.
04.03	Explain basic concepts of positive self-image, wellness, and stress.

04.04	Develop a wellness and stress control plan that can be used in personal and professional life.
05.0	Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
05.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
05.02	Identify and describe methods in medical error reduction and prevention in the dental healthcare setting.
05.03	Demonstrate an understanding of personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.04	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
05.05	Demonstrate procedures for the safe transport and transfer of patients.
05.06	Describe fire safety, disaster, and evacuation procedures.
05.07	Explain emergency procedures to follow in response to workplace accidents.
05.08	Demonstrate handwashing and the use of personal protective equipment used in dentistry.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Take and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain certification in basic life support (BLS), cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
07.0	Use information technology tools. (Optional) – The student will be able to:
07.01	Define terms and demonstrate basic computer skills.
07.02	Interpret information from electronic medical documents.
08.0	Explain the importance of employability skills. – The student will be able to:
08.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
08.02	Exemplify basic professional standards of dental healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
08.03	Prepare and maintain a professional portfolio to document knowledge, continued education, skills, and experience. (Optional)
08.04	Write an appropriate resume.
08.05	Conduct a job search and complete a job application form correctly.



08.06	Demonstrate competence in job interview techniques.
08.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.
08.08	Examine licensing, certification, and industry credentialing requirements.
09.0	Demonstrate knowledge of airborne and blood borne diseases. – The student will be able to:
09.01	Recognize emerging diseases and disorders.
09.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by airborne and blood borne pathogens.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by airborne and blood borne pathogens and the public education necessary to combat the spread of these diseases.
09.04	Identify community resources and services available to the individuals with diseases caused by airborne and blood borne pathogens.
09.05	Apply infection control techniques designed to prevent the spread of diseases caused by airborne and blood borne pathogens to the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.
09.06	Demonstrate knowledge of the legal aspects of AIDS, including testing.
10.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
10.01	Analyze attributes and attitudes of an effective leader to include emotional intelligence.
10.02	Recognize factors and situations that may lead to conflict.
10.03	Demonstrate effective techniques for managing team conflict.
11.0	Use dental terminology. -- The student will be able to:
11.01	Identify and define common dental terms.
11.02	Demonstrate the use of proper dental terminology in the dental environment.
12.0	Identify structures and explain functions and pathologies of dental and general head and neck anatomy. -- The student will be able to:
12.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, lymph nodes, nerves, and blood vessels.
12.02	Identify embryonic development of head, oral cavity, and teeth.
12.03	Identify teeth and their landmarks, and the morphological characteristics of each individual tooth.
12.04	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
12.05	Recognize and describe oral pathological conditions, related to the teeth and their supporting structures.

12.06	Recognize and describe developmental anomalies related to the teeth, face, and oral structures.
12.07	Describe and differentiate between normal and malocclusion.
12.08	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the oral cavity.
13.0	Identify principles of microbiology and disease prevention and perform infection control procedures. -- The student will be able to:
13.01	Differentiate between pathogenic and non-pathogenic microorganisms.
13.02	Describe pathogens and modes of disease transmission.
13.03	Differentiate between aseptic and non-aseptic environments.
13.04	Describe and apply methods of cleaning, disinfection, and sterilization.
13.05	Identify chemicals and their uses for controlling the spread of disease in the dental environment.
13.06	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.
13.07	Describe the duties of the dental office safety coordinator.
13.08	Demonstrate compliance with the OSHA Blood Borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.
13.09	Identify and manage hazardous chemicals and biomedical wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200), 64E-16 F.A.C., and Environmental Protection Agency regulations.
13.10	Define principles of infection control including standard and transmission based precautions.
13.11	Demonstrate knowledge of dental asepsis.
13.12	Implement appropriate hand hygiene procedures and use of protective barriers.
13.13	Demonstrate knowledge of surgical asepsis and isolation.
14.0	Identify, describe, maintain and utilize dental instruments and equipment.--The student will be able to:
14.01	Identify various types, functions and operations of dental operator and laboratory equipment.
14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
14.03	Maintain dental operator equipment and instruments.
14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
14.05	Seat and dismiss patients.

14.06	Operate oral evacuation devices and air/water syringe.
14.07	Maintain a clear field of vision including isolation techniques.
14.08	Perform a variety of instrument transfers to include four-handed dentistry.
14.09	Utilize appropriate chairside assistant ergonomics.
14.10	Assist with and place dental dams as permitted by Florida Statute and Florida Board of Dentistry Rule.
15.0	Record patient assessment and treatment data. -- The student will be able to:
15.01	Take and record medical-dental histories.
15.02	Record assessment of existing oral conditions.
15.03	Perform intraoral and extraoral photography.
15.04	Record conditions diagnosed by the dentist.
15.05	Record treatment-related data on the patient's clinical record.
15.06	Record treatment plan and treatment in patient's chart.
15.07	Perform a visual assessment of existing oral conditions.
15.08	Distinguish between and report subjective and objective information.
15.09	Report relevant information in order of occurrence.
16.0	Identify the functions of pharmacology and anesthesia as they relate to dentistry. -- The student will be able to:
16.01	Identify drug requirements, agencies, and regulations including prescribing regulations related to medications subject to addiction.
16.02	Distinguish among the five schedules of controlled substances.
16.03	Record a drug prescription in a patient's chart.
16.04	Utilize ratios and proportional problems to calculate prescribed drug dosages.
16.05	Identify drug actions, side effects, indications and contraindications; verify with Physician's Desk Reference (PDR) or its equivalent.
16.06	Identify common drugs used in dentistry.
16.07	Prepare and apply topical anesthetic agent.

16.08	Identify properties of anesthetics.
16.09	Prepare syringes for the administration of local anesthetics.
16.10	Monitor and identify precautions in the use of nitrous oxide-oxygen conscious sedation.
16.11	Calculate the percentage of nitrous oxide-oxygen delivered during a conscious sedation procedure.
16.12	Identify drugs and agents used for treating dental-related infection.
16.13	Identify and respond to dental office emergencies.
16.14	Describe the signs and symptoms of drug addiction.
16.15	Discuss the dental team's responsibility to recognize patients with drug addictions.
17.0	Identify and perform dental radiographic procedures -- The student will be able to:
17.01	Describe history, physics and biological effects of ionizing radiation.
17.02	Identify parts of the X-ray machine including accessories.
17.03	Demonstrate radiologic health protection techniques.
17.04	Describe dark room/processing procedures, mix solutions.
17.05	Describe the proper disposal of hazardous radiographic waste.
17.06	Place and expose dental radiographic films or phosphors and digital sensors.
17.07	Perform extraoral radiography as required for dental diagnostic procedures.
17.08	Identify radiographic anatomical landmarks and pathologies.
17.09	Mount radiographic surveys.
17.10	Describe how to maintain unexposed film inventory and storage.
17.11	Maintain digitally acquired radiographic images.
17.12	Practice infection control procedures for all radiographic procedures.
18.0	Identify properties and uses, and manipulate dental materials. -- The student will be able to:
18.01	Identify properties and uses and manipulate gypsum.

18.02	Identify properties and uses and manipulate restorative materials.
18.03	Identify properties and uses and manipulate dental cements.
18.04	Place and remove matrices as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.05	Place and remove temporary restorations as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.06	Identify properties and uses and manipulate impression materials.
18.07	Make intraoral impressions as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.08	Identify properties and uses and manipulate acrylics and thermoplastics.
18.09	Identify properties and uses and manipulate waxes.
18.10	Perform dental laboratory procedures to include the fabrication of casts, custom trays, whitening trays, temporary crowns, and bridges.
18.11	Identify and manage hazardous dental materials and wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200) and Environmental Protection Agency regulations.
18.12	Employ measurements of time, temperature, distance, capacity, and mass/weight during the manipulation of dental materials.
19.0	Perform chairside assisting for general dentistry and specialty procedures. -- The student will be able to:
19.01	Describe procedures, equipment, materials, and instrumentation used in the dental specialties to include but not limited to periodontics, endodontics, pedodontics, oral surgery, orthodontics, and prosthodontics.
19.02	Assemble tray set-ups for general and specialty dental procedures.
19.03	Assist in general and specialty dental procedures.
19.04	Describe the special needs of patients during dental procedures.
19.05	Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.
19.06	Describe procedures, equipment, and materials utilized in digital dentistry to include CAD/CAM Technology.
20.0	Describe principles and perform techniques of preventive dentistry. -- The student will be able to:
20.01	Describe the process of oral biofilm formation and its management through preventative dentistry.
20.02	Provide patient preventive education and oral hygiene instruction.
20.03	Prepare and set up for various preventive procedures.
20.04	Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.

20.05	Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.06	Clean and polish removable dental appliances.
20.07	Apply dental sealants as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.08	Identify the elements of nutrition, basic food groups, and acceptable diets as recommended by the U.S. Department of Agriculture.
20.09	Identify dietary deficiencies and dietary practices that contribute to the manifestation of symptoms in the oral cavity.
20.10	Identify community dental resources and services available.
21.0	Perform general dental business office procedures. -- The student will be able to:
21.01	Maintain appointment control.
21.02	Maintain an active recall system.
21.03	Prepare and maintain accurate patient records.
21.04	Prepare and maintain patient financial records, collect fees.
21.05	Demonstrate the use of dental procedure codes and current terminology when preparing and managing insurance claims.
21.06	Differentiate the different categories of dental procedure codes.
21.07	Prepare and maintain office financial records.
21.08	Prepare and maintain dental office inventory control and purchasing.
21.09	Demonstrate public relations responsibilities of the secretary/receptionist.
21.10	Demonstrate skills on office equipment.
21.11	Maintain the dental business office environment.
21.12	Receive and dismiss patients and visitors.
21.13	Demonstrate appropriate patient management/customer service skills.
21.14	Describe the effect of money management on practice goals.
22.0	Demonstrate professionalism as a dental team member in the clinical setting. – The student will be able to:
22.01	Perform dental assisting duties, dental assisting expanded functions, and dental radiographic procedures in a clinical setting under the direct supervision of a licensed dentist.

22.02 Interact with a professional dental team in the delivery of patient services.

22.03 Utilize employability skills.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Field Internship Activities: Clinical experiences are integrated with the didactic portion of this program. Clinical experience assisting a dentist must be an integral part of the educational program designed to perfect students' competence in performing dental assisting functions, rather than to provide basic instruction. The major portion of the students' time in clinical assignments must be spent assisting with or participating in patient care. Prior to clinical assignments, students demonstrate minimum competence in performing the procedures which they will be expected to perform in their clinical experience.

### Special Notes

Dental assisting programs accredited by the American Dental Association Commission on Dental Accreditation are required to implement enrollment and admissions criteria that include the selection of adult students with a high school diploma, its equivalent, or an advanced degree.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the goals of TECH PREP and is based on the model developed by the Allied Health Articulation Task Force.

This program should meet the most current edition of the American Dental Association Accreditation Standards for Dental Assisting Education Programs. For further information, contact: Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611.

For Florida information contact the Florida Agency for Health Care Administration (AHCA), Division of Health Quality Assurance, Board of Dentistry, 4052 Bald Cypress Way, Tallahassee, FL 32399, 850/245-4161.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.



Pursuant to 466.024 F.S., 64B5-16.002 F.A.C. and 64B5-9.011 F.A.C., completers of the dental assisting program may be awarded a certificate verifying formal training which is required for the performance of certain remediable tasks (also known as expanded functions.)

Students should be encouraged to become members and participate in the activities of the professional organization: The American Dental Assistants Association.

Completers of the dental assisting program should be encouraged to take the Dental Assisting National Board (DANB) Certified Dental Assistant (CDA) exam. DANB is recognized by the American Dental Association as the national certification board for dental assistants.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematic 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

## **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 50 credits. When offered at a technical center the standard length of this program is 1230 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Florida Department of Education  
Curriculum Framework

**Program Title:** Health Care Services Specialist  
**Career Cluster:** Health Science

CCC	
CIP Number	0351070102
Program Type	College Credit Certificate (CCC)
Program Length	27 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11-9111 Medical and Health Services Managers

**Purpose**

This certificate program is part of the Health Services Management (60) AS degree program (1351070101).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as Health Care Services supervisor assistants in medicine and health service management. SOC Code 11-9111 (Medical and Health Services Managers). This program is for individuals who are currently employed in the health field or seeking employment in entry-level management positions in the health field.

The content includes but is not limited to, laws and regulations pertaining to health care facilities and agencies, organizational structure of health care facilities, making employee assignments and scheduling, legal aspects of health care, health and safety including CPR and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Recognize and practice safety and security procedures.
- 05.0 Demonstrate information technology applications in healthcare.
- 06.0 Demonstrate employability skills.
- 07.0 Basic knowledge of medical language, anatomy and physiology, disease processes.
- 08.0 Demonstrate knowledge of materials and supplies needed in healthcare settings.
- 09.0 Interpret federal, state and local laws as they apply to health care facilities.
- 10.0 Demonstrate knowledge of the economics involved in healthcare.

Florida Department of Education  
Student Performance Standards

Program Title: Health Care Services  
 CIP Number: 0351070201  
 Program Length: 27 credit hours  
 SOC Code(s): 11-9111

**This certificate program is part of the Health Services Management (60) AS degree program (1351070101). At the completion of this program, the student will be able to:**

**Health Care Management Foundations (1-8)**

01.0	Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the health care delivery system including public, private, government and non-profit.
01.02	Identify types of healthcare settings.
01.03	Identify the perspective of the health care consumer regarding healthcare.
01.04	Describe the composition and functions of a systemic healthcare team including those not based in the health care facility (e.g. medical device rep. and insurance claims adjuster).
01.05	Identify characteristics of effective teams and techniques for managing team conflict.
01.06	Analyze attributes and attitudes of an effective leader.
01.07	Explain both the positive and negative impacts of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop fundamental speaking and active listening skills.
02.02	Distinguish the differences between effective and ineffective communication practices.
02.03	Distinguish the differences between effective and ineffective online communication.
02.04	Recognize communication styles and barriers in both yourself and others and adjust accordingly for optimum application.
02.05	Use factual data to produce and deliver credible and understandable reports.
02.06	Compose written communication for various purposes using correct spelling, grammar, formatting and confidentiality.

02.07	Demonstrate appropriate situational communication by considering diverse cultures and lifestyles, medical conditions and generations.
03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
03.01	Discuss practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.02	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
03.03	Explain the “Patient’s Bill of Rights”.
03.04	Identify the intent, application and violations of the Health insurance Portability and Accountability Act (HIPAA).
03.05	Describe legal documents that allow patients and their guardians to document end-of-life care decisions ahead of time.
03.06	Describe the informed consent process.
03.07	Differentiate between legal and ethical issues in healthcare and the key components of personal, professional, and organizational ethics.
03.08	Recognize the limits of authority, responsibility, and reporting protocols within legal, ethical, and illegal practices.
04.0	Recognize and practice safety and security procedures. – The student will be able to:
04.01	Recognize national personal safety standards advocated by leading healthcare agencies and the necessary protocols to mitigate, manage, and report safety hazards.
04.02	Explain how medical errors might occur and describe ways to prevent or mitigate such errors.
04.03	Discuss appropriate regulatory and accrediting agency patient safety guidelines.
04.04	Demonstrate an understanding of the roles and responsibilities of the healthcare professional during manmade and natural disasters.
04.05	Understand benefits and correct method to put on and disrobe from personal protective equipment (PPE).
04.06	Identify risk management in healthcare settings.
05.0	Demonstrate information technology applications in healthcare. – The student will be able to:
05.01	Demonstrate the ability to use a computer to perform business practices such as word processing, spreadsheets, presentations, and database management.
05.02	Recognize current and changing technology applications in healthcare.
05.03	Discuss methods of communication to access and distribute data including patient portal, electronic messaging, Continuity of Care Documents (CCD) and Health Information Exchanges (HIE).
05.04	Interpret technological capabilities and challenges of Electronic Health Records (EHR) and applications in healthcare.

05.05	Demonstrate how health information is used for institutional and patient strategic planning, outcome assessment, and quality improvement.
05.06	Identify protected Patient Health Information (PHI) and methods for preventing PHI breaches and technology security.
05.07	Explain Meaningful Use as it relates to privacy, security, and access of patients' records.
06.0	Demonstrate employability skills. – The student will be able to:
06.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
06.02	Demonstrate basic professional standards of healthcare workers as they apply to hygiene, dress, language, and behavior (i.e. telephone & email etiquette, social media, courtesy, and self-introductions).
06.03	Identify necessary documents to compete a job application.
06.04	Write an effective resume.
06.05	Conduct a job search to include the required levels of education and credentialing, types of workplace settings, and career growth potential.
06.06	Identify skills for completing and conducting an interview.
07.0	Demonstrate basic knowledge of medical language, anatomy and physiology, and disease processes. – The student will be able to:
07.01	Demonstrate knowledge of medical and clinical terminology as relates to healthcare.
07.02	Describe the structure and function of different body systems.
07.03	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body.
07.04	Demonstrate an understanding of basic discharge and transfer procedures.
08.0	Demonstrate knowledge of materials and supplies needed in healthcare settings. – The student will be able to:
08.01	Prepare purchase orders with a focus on quality, price, and quantity required.
08.02	Demonstrate a working knowledge of an effective inventory management system.
08.03	Identify accounts payable practices.
09.0	Interpret federal, state and local laws as they apply to health care facilities. – The student will be able to:
09.01	Cite federal, state and local institutional requirements.
09.02	List required standards and procedures for facility and staff.
09.03	Identify mandatory requirements regarding environmental health and safety standards.

09.04	Discuss the impact of legislative changes on health care facilities.
10.0	Demonstrate knowledge of the economics involved in healthcare. – The student will be able to:
10.01	Identify common methods, benefits and challenges of payment for healthcare services.
10.02	Demonstrate knowledge of reimbursement systems within healthcare.
10.03	Identify billing and insurance terminology.
10.04	Demonstrate understanding of the process of utilization review.
10.05	Demonstrate knowledge of accounts receivable system that monitors and optimizes reimbursement.
10.06	Demonstrate knowledge of third party reimbursements including Center for Medicare/Medicaid Services (CMS) rulings and precedence to other payers.
10.07	Demonstrate basic knowledge of the procedures and purposes of medical documentation, medical billing and coding.
10.08	Demonstrate knowledge of the revenue cycle.
10.09	Explain government impacts to reimbursement (i.e. value-based payment models, government incentive programs, self-pay models, and HCAPS scores).
10.10	Identify volume and growth strategies for healthcare agencies.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

It is strongly recommended that hands-on practical experience be an integral part of the program.

### **Special Notes**

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The Health Care Services Program, with emphasis on middle management skills, is a complex program requiring current knowledge in both health care and legislation affecting the health care delivery system. Instruction disciplines can come from a variety of fields.

To augment the program areas, community leaders possessing expertise in specific health care areas may be utilized.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Medical Records Transcribing/Healthcare Documentation  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	<b>College Credit</b>	<b>Clock Hour Program</b>
Program Number	N/A	H170508
CIP Number	0351070706	0351070704
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	33 credit hours	1200 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9094 Medical Transcriptionists 29-2099 Health Technologists and Technicians, All Other	31-9094 Medical Transcriptionists 29-2099 Health Technologists and Technicians, All Other
Basic Skills Level:	N/A	Mathematics 10 Language 11 Reading 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare student for employment as medical transcribers SOC 31-9094 Medical Transcriptionists.

The content includes but is not limited to medical terminology, anatomy and physiology, grammar and punctuation, health care delivery systems, health information services, ethical and legal responsibilities, safety/security procedures, word processing/ transcription skills and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### **Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

### **Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 2 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	HIM0009	Introduction to Health Information Technology	90 hours	29-2099
B	HIM0002	Medical Transcriber-ATD 1	370 hours	31-9094
	HIM0083	Medical Transcriber-ATD 2	370 hours	
	HIM0084	Medical Transcriber-ATD 3	370 hours	

### **College Credit**

When offered at the college credit level, this ATD program is part of the Health Information Technology AS degree (1351070700) and has a program length of 33 credits.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Utilize appropriate medical and scientific terminology.
- 14.0 Apply concepts of disease, diagnosis, and treatment of the human body.
- 15.0 Apply rules of English grammar and punctuation.
- 16.0 Utilize medical references.
- 17.0 Apply healthcare documentation technology.
- 18.0 Perform functions specific to the medical transcription/healthcare documentation specialist.
- 19.0 Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Records Transcribing/Healthcare Documentation -ATD**  
**Career Certificate Program Number: H170508**

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

<b>Course Number: HIM0009</b>	
<b>Occupational Completion Point: A</b>	
<b>Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099</b>	
01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Provide health information education to internal/external stakeholders.

02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:

09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
<b>Course Number: HIM0002</b>	
<b>Occupational Completion Point: B</b>	
<b>Medical Transcriber- ATD 1 – 370 Hours – SOC Code 31-9094</b>	
13.0	Utilize appropriate medical and scientific terminology. – The student will be able to:

13.01	Spell, define and pronounce medical words and their components.
13.02	Define and use medical abbreviations, brief forms, acronyms, eponyms, and foreign words and phrases commonly used in healthcare practice.
13.03	Identify and use the medical terminology related to the structure and function of the human body.
13.04	Identify, pronounce, spell, and define pharmacological terminology.
13.05	Distinguish between or among medical homophones (sound-alikes), commonly confused medical terms, and synonyms.
14.0	Apply concepts of disease, diagnosis and treatment of the human body. – The student will be able to:
14.01	Identify and explain structure and function of the human body in health and in disease.
14.02	Identify disorders and treatments of the human body.
14.03	Identify and explain procedures and technologies, imaging, laboratory, pathology, and their application to diseases and disorders.
14.04	Demonstrate knowledge of pharmacology to include indications and contraindications, dosage, methods of administration, interactions and side effects.
14.05	Organize surgical procedures and other interventional diagnostic and treatment modalities by specialty, indications or related diagnoses, technique, and typical findings.
15.0	Apply rules of English grammar and punctuation. – The student will be able to:
15.01	Recognize and use the principal parts of speech.
15.02	Recognize and use punctuation marks.
15.03	Apply rules of numerical expression.
15.04	Apply rules of capitalization.
15.05	Define and use abbreviations.
15.06	Demonstrate ability to spell words in common usage.
15.07	Evaluate and use reliable resources for research and practice.
15.08	Apply correct medical style as defined by authorities (i.e. AHDI Book of style, AMA Manual of Style).
15.09	Edit and proofread healthcare documentation.
15.10	Recognize and use report formats.
16.0	Utilize medical references. – The student will be able to:



16.01	Utilize medical dictionaries and specialty word books.
16.02	Utilize trade, generic and chemical drug names utilizing reference sources.
16.03	Utilize diagnostic test terminology.
16.04	Utilize appropriate resources located on the internet.
<b>Course Number: HIM0083</b>	
<b>Occupational Completion Point: B</b>	
<b>Medical Transcriber-ATD 2 – 370 Hours – SOC Code 31-9094</b>	
17.0	Apply healthcare documentation technology. – The student will be able to:
17.01	Demonstrate keyboarding skills with an awareness of productivity and accuracy standards and definitions.
17.02	Demonstrate use of transcription, dictation, and speech recognition technology.
17.03	Accurately transcribe and/or edit a required minimum number of reports to include history and physical, consultations, discharge summaries, operative reports and special reports, applying competencies specified in the areas of English Language, Medical Knowledge, Technology, Healthcare Documentation, and Professional Practice.
17.04	Demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
17.05	Identify inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
17.06	Demonstrate advanced use of word processing programs, including commands for editing, file organization, and retrieval.
17.07	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
17.08	Demonstrate a general knowledge of health information systems including the functions related to dictation/transcription integration, editing, and common terminology.
18.0	Perform functions specific to medical transcriptionist/ healthcare documentation specialist. – The student will be able to:
18.01	Promote common health information policies and procedures for security specific to the role of the medical transcriptionist/ healthcare documentation specialist.
18.02	Demonstrate workstation ergonomics specific to the medical transcriptionist/ healthcare documentation specialist
18.03	Demonstrate an awareness of the opportunities in medical transcription/healthcare documentation and related careers and the importance of professional development.
18.04	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
18.05	Explain the scope of work of the medical transcriptionist/healthcare documentation specialist.
18.06	Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).

**Course Number: HIM0084**  
**Occupational Completion Point: B**  
**Medical Transcriber-ATD 3 – 370 Hours – SOC Code 31-9094**

19.0 Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences. – The student will:

19.01 Model the role and responsibilities of the healthcare documentation transcription specialists.

19.02 Apply knowledge and skills related to speech recognition, dictation, documentation standards, technology, and transcription.

19.03 Perform real-world applications of healthcare documentation/transcription principles and best practices.

19.04 Analyze errors and devise corrective strategies.

19.05 Transcribe and/or edit a minimum 2100 minutes of authentic clinician-generated documentation.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Medical Records Transcribing/Healthcare Documentation - ATD  
**ATD CIP Number:** 0351070706  
**SOC Code(s):** 31-9094

When this program is offered at the college level, the following standards and benchmarks apply:

01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Recognize the importance of patient/client education regarding healthcare.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic,

	and religious groups.
	02.11 Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
	03.01 Discuss the history of health information management.
	03.02 Discuss the professional opportunities within the health information professions.
	03.03 Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
	04.01 Describe the various uses of primary and secondary health data and data sets.
	04.02 Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
	05.01 Demonstrate an understanding of the various formats of the health record.
	05.02 Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
	06.01 Discuss how changing regulations and technology impact the health information field.
	06.02 Interpret information from health information systems and applications in healthcare.
	06.03 Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
	07.01 Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
	08.01 Describe the code of ethics consistent with healthcare occupations.
	08.02 Analyze ethical issues related to health information.
	08.03 Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:

09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality, and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
13.0	Utilize appropriate medical and scientific terminology. – The student will be able to:
13.01	Spell, define and pronounce medical words and their components.
13.02	Define and use medical abbreviations, brief forms, acronyms, eponyms, and foreign words and phrases commonly used in healthcare practice.

13.03	Identify and use the medical terminology related to the structure and function of the human body.
13.04	Identify, pronounce, spell, and define pharmacological terminology.
13.05	Distinguish between or among medical homophones (sound-alikes), commonly confused medical terms, and synonyms.
14.0	Apply concepts of disease, diagnosis and treatment of the human body. – The student will be able to:
14.01	Identify and explain structure and function of the human body in health and in disease.
14.02	Identify disorders and treatments of the human body.
14.03	Identify and explain procedures and technologies, imaging, laboratory, pathology, and their application to diseases and disorders.
14.04	Demonstrate knowledge of pharmacology to include indications and contraindications, dosage, methods of administration, interactions and side effects.
14.05	Organize surgical procedures and other interventional diagnostic and treatment modalities by specialty, indications or related diagnoses, technique, and typical findings.
15.0	Apply rules of English grammar and punctuation. – The student will be able to:
15.01	Recognize and use the principal parts of speech.
15.02	Recognize and use punctuation marks.
15.03	Apply rules of numerical expression.
15.04	Apply rules of capitalization.
15.05	Define and use abbreviations.
15.06	Demonstrate ability to spell words in common usage.
15.07	Evaluate and use reliable resources for research and practice.
15.08	Apply correct medical style as defined by authorities (i.e. AHDI Book of style, AMA Manual of Style).
15.09	Edit and proofread healthcare documentation.
15.10	Recognize and use report formats.
16.0	Utilize medical references. – The student will be able to:
16.01	Utilize medical dictionaries and specialty word books.
16.02	Utilize trade, generic and chemical drug names utilizing reference sources.

16.03	Utilize diagnostic test terminology.
16.04	Utilize appropriate resources located on the internet.
17.0	Apply healthcare documentation technology. – The student will be able to:
17.01	Demonstrate keyboarding skills with an awareness of productivity and accuracy standards and definitions.
17.02	Demonstrate use of transcription, dictation, and speech recognition technology.
17.03	Accurately transcribe and/or edit a required minimum number of reports to include history and physical, consultations, discharge summaries, operative reports and special reports, applying competencies specified in the areas of English Language, Medical Knowledge, Technology, Healthcare Documentation, and Professional Practice.
17.04	Demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
17.05	Identify inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
17.06	Demonstrate advanced use of word processing programs, including commands for editing, file organization, and retrieval.
17.07	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
17.08	Demonstrate a general knowledge of health information systems including the functions related to dictation/transcription integration, editing, and common terminology.
18.0	Perform functions specific to medical transcriptionist/ healthcare documentation specialist. – The student will be able to:
18.01	Promote common health information policies and procedures for security specific to the role of the medical transcriptionist/ healthcare documentation specialist.
18.02	Demonstrate workstation ergonomics specific to the medical transcriptionist/ healthcare documentation specialist
18.03	Demonstrate an awareness of the opportunities in medical transcription/healthcare documentation and related careers and the importance of professional development.
18.04	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
18.05	Explain the scope of work of the medical transcriptionist/healthcare documentation specialist.
18.06	Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).
19.0	Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences. – The student will:
19.01	Model the role and responsibilities of the healthcare documentation transcription specialists.
19.02	Apply knowledge and skills related to speech recognition, dictation, documentation standards, technology, and transcription.
19.03	Perform real-world applications of healthcare documentation/transcription principles and best practices.

19.04 Analyze errors and devise corrective strategies.

19.05 Transcribe and/or edit a minimum 2100 minutes of authentic clinician-generated documentation.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Faculty teaching in this program must have a minimum of a B.S. degree in Health Information Management or Office Systems Technology -Medical Office Systems Specializations or an associate degree and demonstrated competencies in the specialty area as defined by Southern Association of Colleges and Schools (SACS).

For those programs preparing students for the Registered Healthcare Documentation Specialist industry certification through Association for the Healthcare Documentation Integrity (AHDI) the model curriculum of the AHDI should be used to properly prepare students for this examination. Industry Certification is voluntary and is sponsored by the AHDI.

4230 Kiernan Avenue  
Suite 130  
Modesto, CA 95356  
Phone: Toll Free (800) 982-2182 - Direct (209) 527-9620  
Fax: 209-527-9633.

Students should be encouraged to become members of their professional organization, and participate in the state/local chapter activities.

Outcomes 01- 12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

The program should prepare the graduate to take the national examination to become a Certified Medical Transcriptionist. Certification is voluntary and is sponsored by the American Association for Medical Transcription, 3460 Oakdale Rd. Suite M, Modesto, CA 95355-9690, 800-982-2182 or (209) 551-0883.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

## **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 33 credits. When offered at a technical center the standard length of this program is 1200 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Florida Department of Education  
Curriculum Framework

**Program Title:** Healthcare Informatics Specialist  
**Career Cluster:** Health Science

CCC	
CIP Number	0351070712
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians

**Purpose**

This certificate program is part of the Health Information Technology AS degree program (1351070700).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as entry level Healthcare Informatics Specialists or to provide supplemental training for persons previously or currently employed in related health record or information technology occupations.

The content includes but is not limited to biomedical sciences, medical terminology, healthcare delivery systems, basic principles of healthcare informatics; electronic health/medical record systems; data and workflow management concepts; and project management skills specific to healthcare informatics, ethical and legal concepts, health data content, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Examine the various informatics related disciplines.
- 14.0 Demonstrate ethical and legal principles with regard to the role of the informatics specialist.
- 15.0 Apply appropriate resources in healthcare informatics to retrieve and analyze relevant information.
- 16.0 Manage health data processes and systems.
- 17.0 Analyze healthcare statistics, including research and performance improvement.
- 18.0 Perform appropriate information technology and systems functions.
- 19.0 Perform project management principles and best practices.
- 20.0 Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems.
- 21.0 Perform proficiently in the application and integration of healthcare informatics concepts and skills through practical lab experiences.

Florida Department of Education  
Student Performance Standards

**Program Title:** Healthcare Informatics Specialist  
**CIP Number:** 0351070712  
**Program Length:** 24 credit hours  
**SOC Code(s):** 29-2071

**This certificate program is part of the Health Information Technology AS degree program (1351070700). At the completion of this program, the student will be able to:**

01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.

02.09	Provide health information education to internal/external stakeholders.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.

09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:
09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords, and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
13.0	Examine the various informatics related disciplines. – The student will be able to:
13.01	Identify the development of the informatics discipline, including the present industry environment and future trends.



13.02	Demonstrate comprehensive knowledge of health data standards for implementation of health information systems.
14.0	Demonstrate ethical and legal principles with regard to the role of the informatics specialist. – The student will be able to:
14.01	Apply the Code of Ethics to informatics as it relates to professional organizations.
14.02	Explain the scope of work of the healthcare informatics specialist.
15.0	Apply appropriate resources in healthcare informatics to retrieve and analyze relevant information. – The student will be able to:
15.01	Demonstrate the ability to identify credible informatics resources relevant to the content, applications, and assignments.
15.02	Utilize case studies and best practices in informatics projects and course work.
16.0	Manage health data processes and systems. – The student will be able to:
16.01	Oversee the collection and maintenance of health data, data sets, quality indicators, and databases.
16.02	Apply policies and procedures to health informatics processes.
16.03	Maintain and verify data quality, standards, and data sources for all health information systems across the continuum of care.
17.0	Analyze healthcare statistics, including research and performance improvement. – The student will be able to:
17.01	Abstract and maintain data for clinical indices/databases/registries.
17.02	Model data as representative visual information to achieve desired outcomes.
17.03	Calculate basic descriptive, institutional, and healthcare statistics.
17.04	Identify common research methods in accordance with Institutional Review Board (IRB) processes and policies.
17.05	Utilize technologies for trend analysis, end user support, decision making, and strategic planning.
17.06	Report data for facility wide quality management and performance improvement programs.
18.0	Perform appropriate information technology and systems functions. – The student will be able to:
18.01	Demonstrate advanced proficiency in using such as spreadsheets and databases in the execution of projects and presentations.
18.02	Utilize specialized software in processes affiliated with treatment, payment, and operations (TPO).
18.03	Apply policies and procedures to facilitate the use of electronic health record (EHR), personal health record (PHR), public health, and other applications and networks.
18.04	Apply knowledge of data base modeling to meet departmental needs.

18.05	Utilize and maintain appropriate electronic or imaging technology for data/record storage.
18.06	Perform queries and generate reports to facilitate decision making.
18.07	Utilize tools and techniques for retention, archiving, and destruction of information in accordance with current requirements and standards in multiple formats.
18.08	Protect data integrity and validity using software and hardware technology.
19.0	Perform project management principles and best practices. – The student will be able to:
19.01	Demonstrate an understanding of the general principles and tools of informatics project management.
19.02	Demonstrate abilities related to team work, project resource allocation, and problem resolution associated in a healthcare informatics project.
20.0	Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems. – The student will be able to:
20.01	Apply standard selection processes for health information systems using best practices.
20.02	Implement information technologies across the healthcare continuum of care.
20.03	Identify technological and changing management issues and problem resolution associated with health information systems.
20.04	Benchmark S.M.A.R.T. goals for projects.
20.05	Map workflow and process assessment as it pertains to information technology.
20.06	Summarize information systems theory.
20.07	Describe strategic planning for implementation of health information systems.
20.08	Identify security risks including physical, virtual, and network areas.
20.09	Take part in end-user training sessions, including planning training sessions and development of training material.
20.10	Examine the influence and scope of health information system practices on a national and international scale.
20.11	Oversee user access logs/audit trails to track history of access to and disclosure of identifiable patient data.
21.0	Perform proficiently in the application and integration of healthcare informatics concepts and skills through practical lab experiences. – The student will be able to:
21.01	Model the role and responsibilities of the health informatics specialist as team leader and/or project manager.
21.02	Apply knowledge and skills related to the health information systems, personnel, equipment, and resources.
21.03	Perform real-world applications of healthcare informatics principles and best practices.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The cooperative method of instruction or clinical rotation is appropriate for this program. Whenever these methods are offered, the following is required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; and a work station which reflects equipment, skills, and tasks which are relevant to the occupation which the student has chosen as a career goal. The student may receive compensation for work performed.

Faculty teaching this program must have a minimum of an AS degree in Healthcare Informatics, Nursing, Health Information Management.

Students should be encouraged to become members and participate in the activities of the professional organizations: American Health Information Management Association (AHIMA), Healthcare Information and Management Systems Society (HIMSS), American Medical Informatics Association (AMIA), and other discipline-specific professional informatics organizations.

Outcomes 01-12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Medical Coder/Biller  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	<b>College Credit</b>	<b>Clock Hour Program</b>
Program Number	N/A	H170530
CIP Number	0351071400	0351071405
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	37 credit hours	1110 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians 29-2099 Health Technologists and Technicians, All Other	29-2071 Medical Records and Health Information Technicians 29-2099 Health Technologists and Technicians, All Other
Basic Skills Level:	N/A	Mathematics 10 Language 11 Reading 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment in a variety of health care settings as entry level coder, medical record coder, coding technician, or coding clerks, or medical coder/billers or SOC Code 29-2071 (Medical Records and Health Information Technicians).

The content includes but is not limited to medical terminology, anatomy and physiology, coding systems, fundamentals of disease process including pharmacology, health care delivery systems, basics of medical records services, ethical and legal responsibilities, safety/security procedures, basic data processing, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### **Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

### **Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 2 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	HIM0009	Introduction to Health Information Technology	90 hours	29-2099
B	HIM0091	Medical Coder/Biller I	350 hours	29-2071
	HIM0092	Medical Coder/Biller II	350 hours	
	HIM0093	Medical Coder/Biller III	320 hours	

### **College Credit**

When offered at the college credit level, this ATD program is part of the Health Information Technology (1351070700) and has a program length of 37 credits.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Describe the anatomy and physiology of the human body.
- 14.0 Demonstrate proficiency in the application of medical terminology.
- 15.0 Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology.
- 16.0 Demonstrate proficiency in the use of ICD and HCPCS/CPT coding systems, both manual and automated.
- 17.0 Perform coding complexities proficiently.
- 18.0 Explain the significance of health information services as it relates to the medical coder/biller.
- 19.0 Demonstrate professional and ethical behavior of a medical coder/biller.
- 20.0 Perform healthcare revenue cycle management processes.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Coder/Biller - ATD  
Career Certificate Program Number: H170530**

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

<b>Course Number: HIM0009</b>	
<b>Occupational Completion Point: A</b>	
<b>Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099</b>	
01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.

02.09	Provide health information education to internal/external stakeholders.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.



09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:
09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
<b>Course Number: HIM HIM0091</b> <b>Occupational Completion Point: B</b> <b>Medical Coder/Biller I – 350 Hours – SOC Code 29-2071</b>	

13.0	Describe the anatomy and physiology of the human body. – The student will be able to:
13.01	Describe the structure and function of the respiratory system.
13.02	Describe the structure and function of the circulatory system.
13.03	Describe the structure and function of the musculoskeletal & connective tissue system.
13.04	Describe the structure and function of nervous and sensory systems.
13.05	Describe the structure and function of the reproductive system.
13.06	Describe the structure and function of the urinary system.
13.07	Describe the structure and function of the digestive system.
13.08	Describe the structure and function of the endocrine system.
13.09	Describe the structure and function of the integumentary system.
13.10	Describe major psychiatric disorders.
14.0	Demonstrate proficiency in the application of medical terminology. – The student will be able to:
14.01	Identify word parts of medical terminology in daily use.
14.02	Build, spell and pronounce correctly, appropriate terms from word parts learned and be able to give the meaning of the word.
14.03	Identify word parts and be able to build, spell and understand new words with those parts.
14.04	Spell and use medical abbreviations.
14.05	Identify terminology specific to healthcare settings including surgical, medical, and therapeutic.
14.06	Apply medical reference sources.
15.0	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology. – The student will be able to:
15.01	Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
15.02	Demonstrate an understanding of the general pathogenesis and morphology of disease and its role in the disease process.
15.03	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
15.04	Identify and use diagnostic test terminology.

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**Course Number: HIM HIM0092**  
**Occupational Completion Point: B**  
**Medical Coder/Biller II – 350 Hours – SOC Code 29-2071**

16.0	Demonstrate proficiency in use of ICD and HCPCS/CPT coding systems, both manual and automated. – The student will be able to:
16.01	Apply conventions and guidelines used in coding.
16.02	Describe the process to update coding resources.
16.03	Assign and/or verify diagnosis, procedure, HCPCS level II codes, and applicable modifiers and groupings in accordance with official guidelines.
16.04	Utilize ICD-CM, ICD-PCS, CPT (all sections), and HCPCS Level II code sets to assign diagnosis and procedure codes to intermediate and advanced case studies and authentic health records/abstracts.
16.05	Describe components of revenue cycle management and clinical documentation improvement including quality indicators as it relates to coding.
16.06	Identify any discrepancies, incomplete information, and/or poor documentation practices in relation to coding while following appropriate departmental policies for correcting errors or improving documentation practices.
17.0	Perform coding complexities proficiently. – The student will be able to:
17.01	Apply advanced coding concepts to complex authentic health records/abstracts and/or case studies across the continuum of care.
17.02	Analyze case-mix, severity of illness systems, and coding quality monitors and reporting.
17.03	Utilize a variety of simulated patient records from across the continuum of care, interpret data, and assign and/or verify codes.
17.04	Analyze the various classification systems.
18.0	Explain the significance of health information services as it relates to the medical coder/biller. – The student will be able to:
18.01	Describe the functions of a health information management department and how this department interacts with the medical coder/biller.
18.02	Describe the development of the health record to include all types used in the current industry.
18.03	Explain the importance of the health record in relation to state and federal agencies, including compliance area.

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**Course Number: HIM HIM0093**  
**Occupational Completion Point: B**  
**Medical Coder/Biller III – 320 Hours – SOC Code 29-2071**

19.0 Demonstrate professional and ethical behavior of a medical coder/biller. – The student will be able to:

19.01 Explain the scope of work of the medical coder/biller.

19.02 Demonstrate ethical coding practices as outlined by professional associations.

20.0 Perform healthcare revenue cycle management processes. – The student will be able to:

20.01 Prepare and submit applicable payer claims.

20.02 Analyze various payer types.

20.03 Perform patient accounting functions including claims, denials, rejections, appeals, collections, and payment resubmission using applicable software.

20.04 Describe characteristics of reimbursement methodology systems across the continuum of care.

20.05 Analyze charge master and superbill maintenance.

20.06 Understand compliance strategies and reporting as well as regulatory guidelines.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Medical Coder/Biller-ATD  
**ATD CIP Number:** 0351071400  
**SOC Code(s):** 29-2071

When this program is offered at the college level, the following standards and benchmarks apply:

01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Recognize the importance of patient/client education regarding healthcare.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic,

	ethnic, and religious groups.
	02.11 Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
	03.01 Discuss the history of health information management.
	03.02 Discuss the professional opportunities within the health information professions.
	03.03 Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
	04.01 Describe the various uses of primary and secondary health data and data sets.
	04.02 Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
	05.01 Demonstrate an understanding of the various formats of the health record.
	05.02 Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
	06.01 Discuss how changing regulations and technology impact the health information field.
	06.02 Interpret information from health information systems and applications in healthcare.
	06.03 Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
	07.01 Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
	08.01 Describe the code of ethics consistent with healthcare occupations.
	08.02 Analyze ethical issues related to health information.
	08.03 Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:

09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
13.0	Describe the anatomy and physiology of the human body. – The student will be able to:
13.01	Describe the structure and function of the respiratory system.
13.02	Describe the structure and function of the circulatory system.

13.03	Describe the structure and function of the musculoskeletal & connective tissue system.
13.04	Describe the structure and function of nervous and sensory systems.
13.05	Describe the structure and function of the reproductive system.
13.06	Describe the structure and function of the urinary system.
13.07	Describe the structure and function of the digestive system.
13.08	Describe the structure and function of the endocrine system.
13.09	Describe the structure and function of the integumentary system.
13.10	Describe major psychiatric disorders.
14.0	Demonstrate proficiency in the application of medical terminology. – The student will be able to:
14.01	Identify word parts of medical terminology in daily use.
14.02	Build, spell and pronounce correctly, appropriate terms from word parts learned and be able to give the meaning of the word.
14.03	Identify word parts and be able to build, spell and understand new words with those parts.
14.04	Spell and use medical abbreviations.
14.05	Identify terminology specific to healthcare settings including surgical, medical, and therapeutic.
14.06	Apply medical reference sources.
15.0	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology. – The student will be able to:
15.01	Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
15.02	Demonstrate an understanding of the general pathogenesis and morphology of disease and its role in the disease process.
15.03	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
15.04	Identify and use diagnostic test terminology.
16.0	Demonstrate proficiency in use of ICD and HCPCS/CPT coding systems, both manual and automated. – The student will be able to:
16.01	Apply conventions and guidelines used in coding.
16.02	Describe the process to update coding resources.



16.03	Assign and/or verify diagnosis, procedure, HCPCS level II codes, and applicable modifiers and groupings in accordance with official guidelines.
16.04	Utilize ICD-CM, ICD-PCS, CPT (all sections), and HCPCS Level II code sets to assign diagnosis and procedure codes to intermediate and advanced case studies and authentic health records/abstracts.
16.05	Describe components of revenue cycle management and clinical documentation improvement including quality indicators as it relates to coding.
16.06	Identify any discrepancies, incomplete information, and/or poor documentation practices in relation to coding while following appropriate departmental policies for correcting errors or improving documentation practices.
17.0	Perform coding complexities proficiently. – The student will be able to:
17.01	Apply advanced coding concepts to complex authentic health records/abstracts and/or case studies across the continuum of care.
17.02	Analyze case-mix, severity of illness systems, and coding quality monitors and reporting.
17.03	Utilize a variety of simulated patient records from across the continuum of care, interpret data, and assign and/or verify codes.
17.04	Analyze the various classification systems.
18.0	Explain the significance of health information services as it relates to the medical coder/biller. – The student will be able to:
18.01	Describe the functions of a health information management department and how this department interacts with the medical coder/biller.
18.02	Describe the development of the health record to include all types used in the current industry.
18.03	Explain the importance of the health record in relation to state and federal agencies, including compliance area.
19.0	Demonstrate professional and ethical behavior of a medical coder/biller. – The student will be able to:
19.01	Explain the scope of work of the medical coder/biller.
19.02	Demonstrate ethical coding practices as outlined by professional associations.
20.0	Perform healthcare revenue cycle management processes. – The student will be able to:
20.01	Prepare and submit applicable payer claims.
20.02	Analyze various payer types.
20.03	Perform patient accounting functions including claims, denials, rejections, appeals, collections, and payment resubmission using applicable software.
20.04	Describe characteristics of reimbursement methodology systems across the continuum of care.
20.05	Analyze charge master and superbill maintenance.

20.06 Understand compliance strategies and reporting as well as regulatory guidelines.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

Students should be encouraged to become members and participate in the activities of the professional organizations: American Health Information Management Association and/or American Academy of Procedural Coders.

About AHIMA Credentials:

Completers of the Medical Biller Coder program may take the Certified Coding Associate (CCA) credential exam as the first step in their coding career. The CCA is an entry-level credential that distinguishes new coders in the job market. Individuals with a CCA credential:

- Exhibit a level of commitment, competency, and professional capability usually absent in a newcomer to the field
- Demonstrate a commitment to the coding profession
- Distinguish themselves from non-credentialed coders and those holding credentials from other organizations less demanding of the higher level of expertise required to earn AHIMA certification.

The CCA should be viewed as the starting point for an individual entering a career as a coder. The AHIMA CCS and CCS-P exams demonstrate mastery level skills in coding. Most individuals challenge the CCS or CCS-P exams after two or more years of work experience in coding.

American Health Information Management Association  
919 North Michigan Ave., Suite 2150  
Chicago, IL. 60611-5519  
(312) 233-1100

The American Academy of Professional Coders (AAPC) sponsors a certification exam for coders with expertise in physician-based settings which leads to the title of Certified Professional Coder (CPC) or Certified Professional Coder Hospital (CPC-H).

American Academy of Professional Coders  
309 West 700 South  
Salt Lake City, UT. 84101  
800-626-2633

The National Healthcare Association also offers a national certification examination for a Certified Billing and Coding Specialist (CBCS).

National Healthcareer Association  
7500 West 160<sup>th</sup> Street  
Stilwell, KS 66085  
800-499-9092

Outcomes 01-12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

## **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 37 credits. When offered at a technical center the standard length of this program is 1110 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Information Coder/Biller  
**Career Cluster:** Health Science

CCC	
CIP Number	0351071404
Program Type	College Credit Certificate (CCC)
Program Length	37 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians

**Purpose**

This certificate program is part of the Health Information Technology AS degree program (1351070700).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment in a variety of health care settings as entry level coder, medical record coder, coding technician, or coding clerks, or medical coder/billers, SOC Code 29-2071 (Medical Records and Health Information Technicians). Some colleges may choose to divide the Coder/Biller Certificate into two tracks, one for coding and one for billing.

The content includes but is not limited to medical terminology, anatomy and physiology, coding systems, fundamentals of disease process, including pharmacology, healthcare delivery systems, basics of medical records services, ethical and legal responsibilities, safety/security procedures, basic data processing, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Describe the anatomy and physiology of the human body.
- 14.0 Demonstrate proficiency in the application of medical terminology.
- 15.0 Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology.
- 16.0 Demonstrate proficiency in the use of ICD and HCPCS/CPT coding systems, both manual and automated.
- 17.0 Perform coding complexities proficiently.
- 18.0 Explain the significance of health information services as it relates to the medical coder/biller.
- 19.0 Demonstrate professional and ethical behavior of a medical coder/biller.
- 20.0 Perform healthcare revenue cycle management processes.

Florida Department of Education  
Student Performance Standards

Program Title: Medical Information Coder/Biller  
 CIP Number: 0351071404  
 Program Length: 37 credit hours  
 SOC Code(s): 29-2071

**This certificate program is part of the Health Information Technology AS degree program (1351070700). At the completion of this program, the student will be able to:**

01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.



02.09	Provide health information education to internal/external stakeholders.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.

09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:
09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
13.0	Describe the anatomy and physiology of the human body. – The student will be able to:
13.01	Describe the structure and function of the respiratory system.

13.02	Describe the structure and function of the circulatory system.
13.03	Describe the structure and function of the musculoskeletal & connective tissue system.
13.04	Describe the structure and function of nervous and sensory systems.
13.05	Describe the structure and function of the reproductive system.
13.06	Describe the structure and function of the urinary system.
13.07	Describe the structure and function of the digestive system.
13.08	Describe the structure and function of the endocrine system.
13.09	Describe the structure and function of the integumentary system.
13.10	Describe major psychiatric disorders.
14.0	Demonstrate proficiency in the application of medical terminology. – The student will be able to:
14.01	Identify word parts of medical terminology in daily use.
14.02	Build, spell and pronounce correctly, appropriate terms from word parts learned and be able to give the meaning of the word.
14.03	Identify word parts and be able to build, spell and understand new words with those parts.
14.04	Spell and use medical abbreviations.
14.05	Identify terminology specific to healthcare settings including surgical, medical, and therapeutic.
14.06	Apply medical reference sources.
15.0	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology. – The student will be able to:
15.01	Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
15.02	Demonstrate an understanding of the general pathogenesis and morphology of disease and its role in the disease process.
15.03	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
15.04	Identify and use diagnostic test terminology.
16.0	Demonstrate proficiency in use of ICD and HCPCS/CPT coding systems, both manual and automated. – The student will be able to:
16.01	Apply conventions and guidelines used in coding.

16.02	Describe the process to update coding resources.
16.03	Assign and/or verify diagnosis, procedure, HCPCS level II codes, and applicable modifiers and groupings in accordance with official guidelines.
16.04	Utilize ICD-CM, ICD-PCS, CPT (all sections), and HCPCS Level II code sets to assign diagnosis and procedure codes to intermediate and advanced case studies and authentic health records/abstracts.
16.05	Describe components of revenue cycle management and clinical documentation improvement including quality indicators as it relates to coding.
16.06	Identify any discrepancies, incomplete information, and/or poor documentation practices in relation to coding while following appropriate departmental policies for correcting errors or improving documentation practices.
17.0	Perform coding complexities proficiently. – The student will be able to:
17.01	Apply advanced coding concepts to complex authentic health records/abstracts and/or case studies across the continuum of care.
17.02	Analyze case-mix, severity of illness systems, and coding quality monitors and reporting.
17.03	Utilize a variety of simulated patient records from across the continuum of care, interpret data, and assign and/or verify codes.
17.04	Analyze the various classification systems.
18.0	Explain the significance of health information services as it relates to the medical coder/biller. – The student will be able to:
18.01	Describe the functions of a health information management department and how this department interacts with the medical coder/biller.
18.02	Describe the development of the health record to include all types used in the current industry.
18.03	Explain the importance of the health record in relation to state and federal agencies, including compliance area.
19.0	Demonstrate professional and ethical behavior of a medical coder/biller. – The student will be able to:
19.01	Explain the scope of work of the Medical Coder/Biller.
19.02	Demonstrate ethical coding practices as outlined by professional associations.
20.0	Perform healthcare revenue cycle management processes. – The student will be able to:
20.01	Prepare and submit applicable payer claims.
20.02	Analyze various payer types.
20.03	Perform patient accounting functions including claims, denials, rejections, appeals, collections, and payment resubmission using applicable software.
20.04	Describe characteristics of reimbursement methodology systems across the continuum of care.

20.05 Analyze charge master and superbill maintenance.

20.06 Understand compliance strategies and reporting as well as regulatory guidelines.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program is part of Health Information Technology or Office Administration - Medical Office Specialization. The College Credit Certificate guarantees transfer of credit of 37 hours toward the AS degree in Health Information Technology or Office Administration. Minimum entrance requirements for this program include a high school diploma or GED.

The cooperative method of instruction or clinical rotation is appropriate for this program. Whenever these methods are offered, the following is required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; and a work station which reflects equipment, skills, and tasks which are relevant to the occupation which the student has chosen as a career goal. The student may receive compensation for work performed.

Faculty teaching this program must have a minimum of an AS degree in Health Information Management.

Students should be encouraged to become members and participate in the activities of the professional organizations: American Health Information Management Association and/or American Academy of Procedural Coders.

About AHIMA Credentials:

Students who complete the Medical Biller Coder program may take the Certified Coding Associate (CCA) credential exam as the first step in their coding career. The CCA is an entry-level credential that distinguishes new coders in the job market. Individuals with a CCA credential:

- Exhibit a level of commitment, competency, and professional capability usually absent in a newcomer to the field.
- Demonstrate a commitment to the coding profession.
- Distinguish themselves from non-credentialed coders and those holding credentials from other organizations less demanding of the higher level of expertise required to earn AHIMA certification.

The CCA should be viewed as the starting point for an individual entering a career as a coder. The AHIMA CCS and CCS-P exams demonstrate mastery level skills in coding. Most individuals challenge the CCS or CCS-P exams after two or more years of work experience in coding.

American Health Information Management Association  
919 North Michigan Ave., Suite 2150  
Chicago, IL. 60611-5519

(312) 233-1100

The American Academy of Professional Coders (AAPC) sponsors a certification exam for coders with expertise in physician-based settings which leads to the title of Certified Professional Coder (CPC) or Certified Professional Coder Hospital (CPC-H).

American Academy of Professional Coders  
309 West 700 South  
Salt Lake City, UT 84101  
800-626-2633

The National Healthcare Association also offers a national certification examination for a Certified Billing and Coding Specialist (CBCS).

National Healthcare Association  
7500 West 160<sup>th</sup> Street  
Stilwell, Kansas 66085  
800-499-9092

Outcomes 01-12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Clinical Research Coordinator  
**Career Cluster:** Health Science

<b>CCC</b>	
CIP Number	0351071901
Program Type	College Credit Certificate (CCC)
Standard Length	30 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11-9121 Natural Science Managers 11-9199 Manager, All Other 11-9111 Medical and Health Services Manager 31-9099 Healthcare Support Worker, All Other

**Purpose**

This certificate program is part of the Clinical Research Professional AS or AAS degree program (1351071902).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as clinical research coordinators. SOC Code 11-9121 (Natural Science Manager), 11-9111 (Medical and Health Services Manager), 11-9199 (Manager All Other), or 31-9099 (Healthcare Support Workers, All other) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of management, introduction to computer literacy, health care organization, medical ethics, legal aspects, and advanced technical skills in a chosen health-related profession, health and safety, and CPR.



**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 30 credit hours.

**Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate basic knowledge of medical language, anatomy and physiology.
- 02.0 Identify and apply basic knowledge of different aspects of wellness.
- 03.0 Demonstrate knowledge of funding and site sponsorship related to clinical research including: public/private grants and contracts and lifecycles of clinical trials.
- 04.0 Demonstrate knowledge of the guidelines and regulations governing clinical trials.
- 05.0 Demonstrate ability to work as a clinical research professional.
- 06.0 Demonstrate knowledge of the compliance and monitoring issues in clinical research.
- 07.0 Demonstrate knowledge of the research process including: consent, screening, phases of clinical trials, product development and adverse events and safety.
- 08.0 Demonstrate knowledge of current events in the field of public health.
- 09.0 Demonstrate the ability to identify U.S. health care delivery funding sources.
- 10.0 Demonstrate knowledge of the principles and language of pharmacology, including drugs and drug classes, diagnostic tests, indications, techniques.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Clinical Research Coordinator  
**CIP Number:** 0351071901  
**Program Length:** 30 credit hours  
**SOC Code(s):** 11-9121, 11-9111, 11-9199, 31-9099

**This certificate program is part of the Clinical Research Professional AS degree program (1351071902). At the completion of this program, the student will be able to:**

01.0	Demonstrate basic knowledge of medical language, anatomy and physiology. – The student will be able to:
01.01	Define, describe and discuss anatomic descriptive terms of the body.
01.02	Demonstrate an understanding of basic patient discharge and transfer procedures.
01.03	Describe common abbreviations and commonly used medical terms and their proper usage.
01.04	Define and describe anatomic names of bones and organs of the body.
02.0	Identify and apply basic knowledge of different aspects of wellness. – The student will be able to:
02.01	Discuss integrating health living into one’s lifestyle.
02.02	Define: physical fitness, mental health, nutrition, tobacco usage, alcohol consumption, illicit drug use, family living and how these factors connect with the concepts of wellness on a personal level.
02.03	Identify the risk factors for cardiovascular disease.
02.04	Describe the effects of tobacco and smoking on the human body.
02.05	Describe the various fitness methods to improve health.
02.06	Discuss the effects of nutrition on health and wellness.
02.07	Explain body composition and achieving a healthy weight.
02.08	Describe stress management strategies.
02.09	Discuss the use and abuse of illicit drugs in society.
02.10	Describe the effects of chronic disease on the human body.
03.0	Demonstrate knowledge of funding and site sponsorship related to clinical research including: public/private grants and contracts and lifecycles of clinical trials.– The student will be able to:

03.01	Describe key concepts and skills used in the site-sponsor relationship.
03.02	Classify clinical research funding sources and the protocols used to secure funding.
03.03	Discuss basic constructs related to grants & contracts management in clinical research.
03.04	Provide examples of the types of lifecycles of clinical trials.
03.05	Define the terms and language used in startup & closing items on clinical research.
03.06	Determine communication methods to be used in the startup and closing of items in clinical research.
04.0	Demonstrate knowledge of the guidelines and regulations governing clinical trials.– The student will be able to:
04.01	Understand the array of guidelines & regulations governing clinical trials.
04.02	Describe the various HIPAA Privacy & clinical research privacy issues.
04.03	Identify the major GCP/ICH guidelines related to working with human subjects in research.
04.04	Discuss the various sources and uses of essential documents generated from clinical studies.
04.05	Explain the role of compliance in maintaining fidelity to a study protocol.
04.06	Provide examples of a standard response to a request for documentation of meeting award conditions.
04.07	Understand the array of analysis techniques used in interpreting research findings.
05.0	Demonstrate ability to work as a clinical research professional.– The student will be able to:
05.01	Identify clinical and behavioral research settings where Clinical Research Professionals are employed.
05.02	Demonstrate an understanding of the essential duties of a Clinical Research Professional.
05.03	Describe procedures and processes used to protect research participants at placement site.
05.04	Discuss the core research activities of placement site.
05.05	Demonstrate an understanding of how placement site works with: local, county, state and federal agencies to carry out their research activities.
05.06	Evaluate the role of Clinical Research Professionals in research settings.
05.07	Demonstrate the skills necessary to be a productive member of a research team including; working on a multidisciplinary research team and demonstrating an ability to work with confidential research participant information.
06.0	Demonstrate knowledge of the compliance and monitoring issues in clinical research.– The student will be able to:

06.01	Describe the role of compliance in clinical research.
06.02	Identify issues related to compliance in human subject's research.
06.03	Explain activities associated with monitoring within the scope of clinical research.
06.04	Discuss processes used to resolve issues that may arise from monitoring as part of a clinical trial.
06.05	Provide examples of quality assurance audits used in clinical research and discuss their value in relation to performing research with human subjects.
06.06	Define the types of inspections clinical research facilities are subject to.
07.0	Demonstrate knowledge of the research process including: consent, screening, phases of clinical trials, product development and adverse events and safety.– The student will be able to:
07.01	Accurately describe the processes involved in clinical research.
07.02	Define and describe issues associated with participant consent.
07.03	Explain the goals, limitations and basic rules for screening participants.
07.04	Discuss market and social aspects of product development (drugs & devices).
07.05	Discuss impacts of clinical trial stakeholders.
07.06	Accurately describe how epidemiology is used in clinical research.
07.07	Explain the relationship between essential processes related to adverse events & safety.
08.0	Demonstrate knowledge of current events in the field of public health. – The student will be able to:
08.01	Identify outlets (news, media, governmental) used to communicate public health events to the general public.
08.02	Describe the implications of current events on public health.
08.03	Discuss concerns related to how public health information is relayed to the public.
08.04	Recognize how reporting of global events (e.g. epidemics, regime change, and weather events) has the potential to impact other areas.
08.05	Locate emerging public health trends.
08.06	Explain etiology of emerging public health trends discussed throughout semester.
08.07	Discuss legislation designed to protect the public's right to information during major health events (epidemics, terrorism, natural disasters).
09.0	Demonstrate the ability to identify U.S. health care delivery funding sources. – The student will be able to:

09.01	Demonstrate an understanding of the evolutionary perspective of health services and its relevance with the existing healthcare system, facilities and services.
09.02	Explain the social, political, and public policy implications of health-related issues, such as availability, cost, delivery, and financing.
09.03	Describe the various health care organizations and service delivery options.
09.04	Identify the major health professions and explain the role of each and their licensing/educational requirements.
09.05	Compare and contrast the health care delivery systems of the U.S. with other major industrialized nations.
09.06	Understand the array of career choices in the health care sector of the economy.
10.0	Demonstrate knowledge of the principles and language of pharmacology, including drugs and drug classes, diagnostic tests, indications, techniques.-The student will be able to:
10.01	Describe pharmacological principles.
10.02	Classify routes of administration.
10.03	Describe the relationships of drug classes with disease processes and medical specialties.
10.04	Recognize commonly prescribed medications.
10.05	Use appropriate pharmacological and laboratory references.
10.06	Describe indications, actions, dosages, and routes of administration.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA is/are the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Assisting Specialist  
**Career Cluster:** Health Science

**CCC**

CIP Number	0351080104
Program Type	College Credit Certificate (CCC)
Program Length	44 credit hours
CTSO	HOSA
SOC Codes (all applicable)	31-9092 Medical Assistants 31-9099 Healthcare Support Workers, All Other 43-4171 Receptionists and Information Clerks 31-9097 Phlebotomists

**Purpose**

This certificate program is part of the Medical Assisting Advanced AS degree program (1351080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The content includes but is not limited to communication, transcultural communication in healthcare, interpersonal skills, legal and ethical responsibilities, health-illness concepts, administrative and clinical duties, emergency procedures including CPR and first aid, emergency preparedness, safety and security procedures, medical terminology, anatomy and physiology, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate proper use of medical terminology.
- 13.0 Demonstrate knowledge of legal and ethical responsibilities for medical assistants.
- 14.0 Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states.
- 15.0 Demonstrate basic clerical/medical office duties.
- 16.0 Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy.
- 17.0 Discuss phlebotomy in relation to the health care setting.
- 18.0 Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist.
- 19.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 20.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 21.0 Practice infection control following standard precautions.
- 22.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 23.0 Practice quality assurance and safety.
- 24.0 Describe the role of a medical assistant with intravenous therapy in oncology and dialysis.
- 25.0 Describe the cardiovascular system.
- 26.0 Identify legal and ethical responsibilities of an EKG aide.
- 27.0 Perform patient care techniques in the health care facility.
- 28.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 29.0 Demonstrate basic office examination procedures.
- 30.0 Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques.
- 31.0 Demonstrate minor treatments.
- 32.0 Demonstrate knowledge of basic diagnostic medical assisting procedures.
- 33.0 Demonstrate basic radiologic procedures.
- 34.0 Demonstrate knowledge of pharmaceutical principles and administer medications.
- 35.0 Perform CLIA-waived diagnostic clinical laboratory procedures.
- 36.0 Demonstrate knowledge of emergency preparedness and protective practices.
- 37.0 Perform administrative office duties.



- 38.0 Perform administrative and general skills.
- 39.0 Perform clinical and general skills.
- 40.0 Display professional work habits integral to medical assisting.

Florida Department of Education  
Student Performance Standards

**Program Title:** Medical Assisting  
**CIP Number:** 0351080104  
**Program Length:** 44 credit hours  
**SOC Code(s):** 31-9092, 31-9099, 43-4171, 31-9097

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Medical Assisting Advanced AS degree program (1351080103). At the completion of this program, the student will be able to:**

12.0	Demonstrate proper use of medical terminology. – The student will be able to:
12.01	Use medical terminology as appropriate for a medical assistant.
12.02	Identify medical terms labeling the word parts.
12.03	Define medical terms and abbreviations related to all body systems.
13.0	Demonstrate knowledge of legal and ethical responsibilities for medical assistants. – The student will be able to:
13.01	Describe the role of the medical assistant.
13.02	Understand the importance of order entry as it relates to certification of the medical assistant.
13.03	Provide health care as set forth in Florida Statute 458.3485 for the medical assistant.
13.04	Distinguish between the liability of the physicians and staff members in the medical office.
13.05	Explain the principles for preventing medical liability.
13.06	List the principles in the Codes of Ethics for Medical Assistants as stated by the American Association of Medical Assistants.
14.0	Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states. – The student will be able to:

14.01	Define the terms Anatomy and Physiology
14.02	Define both medical terms and abbreviations related to all body systems.
14.03	Define the principle directional terms, planes, quadrants and cavities used in describing the body and the association of body parts to one another.
14.04	Define the levels of organization of the body inclusive of, but not limited to, cells, organs and body systems.
14.05	Describe the function of the 11 major organ systems of the body (1) integumentary, (2) skeletal, (3) muscular, (4) nervous, (5) endocrine, (6) circulatory (cardiovascular) (7) lymphatic, (8) respiratory, (9) digestive, (10) urinary, and (11) reproductive.
14.06	Describe symptoms and common disease pathology related to each body system and the relationship of the disease process to other body systems.
14.07	Discuss diagnostic options to identify common disease pathology and corresponding basic treatment.
14.08	Compare structure and function of the body across the life span.
15.0	Demonstrate basic clerical/medical office duties. – The student will be able to:
15.01	Perform effective communication skills essential to the medical office.
15.02	Maintain filing systems.
15.03	Operate office equipment and perform clerical office procedures.
15.04	Discuss principles of using electronic health record (EHR).
15.05	Prepare and maintain medical records both manually and within the electronic health record (EHR).
15.06	Screen and process mail.
15.07	Schedule routine appointments and patient admissions and/or procedures both manually and within the electronic health record (EHR).
15.08	Adhere to current government regulations, risk management and compliance within the scope of practice of a medical assistant practicing in the State of Florida.
15.09	Maintain office inventory.
15.10	Inform patients of office policies both verbally and written.
15.11	Perform general housekeeping duties.
15.12	Perform daily office activities both manually and within the electronic health record (EHR).
15.13	Receive patients and visitors.
15.14	Identify and maintain office security policies/procedures.

16.0	Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy. – The student will be able to:
16.01	Demonstrate the appropriate professional behavior of a phlebotomist.
16.02	Explain to the patient the procedure to be used in specimen collection.
16.03	Explain in detail the importance of identifying patients correctly when drawing blood.
16.04	Describe the scope of practice for a phlebotomist.
16.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
16.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
17.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
17.01	List, classify and discuss various departments and services within the health care setting with which the phlebotomist must interact to obtain laboratory specimens from patients.
17.02	Identify the major departments/sections within the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
17.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
18.0	Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist. – The student will be able to:
18.01	Describe and define major body systems with emphasis on the circulatory system.
18.02	List and describe the main superficial veins used in performing venipuncture.
18.03	Locate the most appropriate site(s) for both capillary and venipuncture.
18.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes, and plasma.
18.05	Compare and contrast between serum and plasma as it relates to blood collection.
18.06	Discuss hemostasis as it relates to blood collection.
19.0	Recognize and identify collection reagents supplies, equipment, and interfering chemical substances. – The student will be able to:
19.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
19.02	Explain the special precautions and types of equipment needed to collect blood from a pediatric patient.
19.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.

19.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
19.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
19.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
19.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
20.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
20.01	Follow approved procedure for completing a laboratory requisition form.
20.02	Recognize a properly completed requisition.
20.03	Demonstrate knowledge of established protocol for patient and specimen identification.
20.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
20.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
20.06	Perform venipuncture by evacuated tube, butterfly, and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.
20.07	Describe the correct order of draw.
20.08	Describe the use of barcoding systems used for specimen collection.
20.09	Perform a capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
20.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention, and treatment.
20.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
20.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
20.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
20.14	Demonstrate the proper procedure for collecting blood cultures.
20.15	Discuss the effects of hemolysis and methods of prevention.
20.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
21.0	Practice infection control following standard precautions. – The student will be able to:
21.01	Define the term hospital acquired infection.

21.02	Describe and practice procedures for infection prevention including hand washing skills.
21.03	Discuss transmission based precautions.
21.04	Identify potential routes of infection and their complications.
22.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
22.01	Demonstrate good laboratory practice for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
22.02	Demonstrate knowledge of accessioning procedures.
22.03	Describe the significance of time constraints for specimen collection and delivery.
22.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
22.05	Follow protocol for accepting verbal test orders and explain procedure for obtaining signature or other form of authentication of verbal orders.
23.0	Practice quality assurance and safety. – The student will be able to:
23.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
23.02	Practice appropriate patient safety.
23.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
23.04	Follow documentation procedures for work related accidents.
23.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.
24.0	Describe the role of a medical assistant with intravenous therapy in oncology and dialysis. – The student will be able to:
24.01	Outline the principles of intravenous therapy.
24.02	Understand intravenous terminology, practices, and equipment.
24.03	Describe the dangers of intravenous treatment.
24.04	Describe the role of the medical assistant in assisting with intravenous therapy.
25.0	Describe the cardiovascular system. – The student will be able to:
25.01	Locate the heart and surrounding structures.
25.02	Diagram and label the parts of the heart and list the functions of each labeled part.

25.03	Trace the flow of blood through the cardiopulmonary system.
26.0	Identify legal and ethical responsibilities of an EKG aide. – The student will be able to:
26.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
26.02	Maintain a safe and efficient work environment.
26.03	Maintain EKG equipment so it will be safe and accurate.
27.0	Perform patient care techniques in the health care facility. – The student will be able to:
27.01	Describe the physical preparation of the patient for EKG testing.
27.02	Identify patient and verify the requisition order.
27.03	Prepare patient for EKG testing.
27.04	State precautions required when performing an EKG.
28.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. – The student will be able to:
28.01	Calibrate and maintain EKG equipment in the work environment.
28.02	Identify three types of lead systems (standard/limb, augmented, and precordial/chest).
28.03	State Einthoven's triangle.
28.04	Demonstrate proper lead placement including lead placement for patients with special needs
28.05	Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.
28.06	Identify artifacts and mechanical problems.
28.07	Perform a 12 lead EKG.
28.08	Perform a rhythm strip.
28.09	Recognize normal sinus rhythm.
28.10	Report dysrhythmias that are not normal sinus rhythm.
28.11	Recognize a cardiac emergency as seen on the EKG.
28.12	Use documentation skills to identify electrocardiographs.

29.0	Demonstrate basic office examination procedures. – The student will be able to:
29.01	Prepare patients for and assist the physician with physical examinations including, but not limited to, pre and post-natal, male and female reproductive, rectal, and pediatric.
29.02	Measure and record vital signs, recognizing abnormalities and danger signs.
29.03	Measure and record a pulse pressure
29.04	Measure and record an apical pulse.
29.05	Measure and record a orthostatic blood pressure
29.06	Record patient data.
29.07	Instruct patient on breast and testicular self-examinations.
29.08	Assist with pediatric procedures, including, but not limited to, weighing, measuring, and collecting specimens.
29.09	Instruct patients regarding health care and wellness practices including but not limited to dietary guidelines necessary for common diseases.
29.10	Create a patient teaching plan which addresses dietary guidelines and special needs.
29.11	Explore and utilize the U.S. Department of Agriculture's "My Plate" Food Guide.
29.12	Prepare patients for diagnostic procedures.
30.0	Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques. – The student will be able to:
30.01	Demonstrate competence in sanitation, disinfection, and sterilization.
30.02	Identify common instruments.
30.03	Sterilize and maintain instruments and supplies.
30.04	Sanitize instruments.
30.05	Wrap articles for autoclave.
30.06	Sterilize articles in autoclave.
30.07	Chemically disinfect articles.
30.08	Practice infection control and contamination prevention.
30.09	Safely handle contaminated equipment and supplies.



30.10	Create and maintain sterile fields for dressings and minor surgery.
30.11	Prepare for minor surgical procedures including surgical hand wash and applying sterile gloves.
30.12	Remove sutures and staples.
30.13	Correctly dispose of contaminated materials.
31.0	Demonstrate minor treatments. – The student will be able to:
31.01	Perform minor treatments as directed by the physician including hot and cold therapy, (which includes, but is not limited to the following: hot water bag, heating pad, hot soaks and compresses, ice bag, cold compresses and packs).
31.02	Assist the physician with examination, treatment, and/or minor surgery.
31.03	Organize examination and treatment areas before, during, and after patient care.
31.04	Perform orthopedic procedures, including but not limited to the following: crutch measurements and instruction in use of canes, crutches, walkers, and wheelchairs.
31.05	Demonstrate the knowledge of casting procedures and supplies.
31.06	Apply all types of roller bandages using turns as appropriate.
31.07	Perform eye irrigations and instillations.
31.08	Perform ear irrigations and instillations.
32.0	Demonstrate knowledge of basic diagnostic medical assisting procedures. – The student will be able to:
32.01	Perform visual and auditory screening.
32.02	Perform spirometry.
32.03	Perform oximetry.
32.04	Assist in the performance of a pap and pelvic exam.
33.0	Demonstrate basic radiologic procedures. – The student will be able to:
33.01	Describe the basic operation of radiologic equipment and accessories.
33.02	Describe how to maintain x-ray film files.
33.03	Describe computed and digital radiography systems.
33.04	Educate patients in preparation for radiological exams.

33.05	Demonstrate knowledge of ultrasound treatment.
34.0	Demonstrate knowledge of pharmaceutical principles and administer medications. – The student will be able to:
34.01	Identify commonly administered drugs, their uses and effects.
34.02	Identify the major classifications of medications for each body system including, indications for use, side effects, and adverse reactions.
34.03	Use correct pharmaceutical abbreviations and terminology.
34.04	Identify various methods and routes of drug administration.
34.05	Instruct patients regarding self-administration of medications.
34.06	Calculate dosage and administer pharmaceuticals to correct anatomical sites, to correct patient, by correct route of administration, at the correct time and document correctly.
34.07	Demonstrate knowledge of the legal and ethical standards related to the administration and the dispensing of drugs in the office setting under the doctor's supervision.
34.08	Demonstrate knowledge of emergency medications for first aid.
34.09	Identify the dangers and complications associated with drug administration.
34.10	Recognize and report medication errors.
34.11	Demonstrate appropriate techniques to:
34.11.01	Prepare and administer non-parenteral medications (solid, liquids, and inhalers).
34.11.02	Prepare and administer parenteral medications.
34.11.03	Reconstitute powdered drugs.
34.11.04	Prepare injections from ampules and vials.
34.11.05	Apply the Seven Rights of Drug Administration
35.0	Perform CLIA-waived diagnostic clinical laboratory procedures. -- The students will be able to:
35.01	Comply with safety signs, symbols, and labels.
35.02	Recognize signs and symptoms that may indicate to the physician a need for laboratory testing.
35.03	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as “CLIA waived” and the regulatory constraints on test performance.
35.04	Explain the methods of quality control for CLIA-waived testing, identify acceptable and unacceptable control results, and describe specific corrective action required when results are unacceptable.

35.05	Demonstrate proper technique for the collection of urine, capillary whole blood (finger/heel stick), culture material (throat/nasal swab) and other specimen types required for CLIA-waived tests.
35.06	Instruct patients in the proper collection of urine (clean catch, mid-stream), sputum and stool specimens.
35.07	Perform CLIA-waived occult blood tests.
35.08	Perform CLIA-waived urinalysis testing including color and turbidity assessment and reagent test strips.
35.09	Perform CLIA-waived hematology tests (e.g. - hemoglobin, hematocrit).
35.10	Perform CLIA-waived chemistry tests (e.g. - glucose, cholesterol).
35.11	Perform CLIA-waived pregnancy tests.
35.12	Perform CLIA-waived infectious disease testing (e.g. – strep screen, mono test, influenza A/B).
36.0	Demonstrate knowledge of emergency preparedness and protective practices. -- The student will be able to:
36.01	Maintain and operate emergency equipment and supplies.
36.02	Participate in a mock environmental exposure event and document steps taken.
36.03	Explain an evacuation plan for a physician's office.
36.04	Maintain a current list of community resources for emergency preparedness.
37.0	Perform administrative office duties. – The student will be able to:
37.01	Execute data management using electronic health record (EHR) including, but not limited to, patient registration, appointment scheduling, charting, billing and insurance processing, procedure and diagnostic coding, ordering and monitoring patient testing, medication and prescription orders, keyboarding and correspondence, and performing an office inventory.
37.02	Execute non EHR data management including, but not limited to, selecting appropriate procedure and diagnostic codes, process insurance data and claims, develop and maintain billing and collection systems.
37.03	Perform various financial procedures, including, but not limited to, billing and collection procedures, payroll procedures, and checkbook procedures.
37.04	Demonstrate knowledge of management in a medical office including but not limited to personnel records, interviewing, various management styles, risk management, and conflict resolution.
38.0	Perform administrative and general skills. – The student will be able to:
38.01	Understand proper and professional telephone technique.
38.02	Recognize and respond to verbal communication.
38.03	Recognize and respond to non-verbal communication.

38.04	Maintain confidentiality and adhere to HIPAA regulations.
38.05	Understand how to document manually and electronically appropriately.
38.06	Understand how to schedule appointments manually and electronically accurately.
38.07	Understand how to schedule inpatient and/or outpatient procedures accurately.
38.08	Greet patients courteously and professionally.
38.09	Demonstrate safety and quality assurance in the workplace.
39.0	Perform clinical and general skills. – The student will be able to:
39.01	Demonstrate aseptic hand washing technique.
39.02	Dispose of bio-hazardous waste in appropriate containers.
39.03	Adhere to sterilization techniques according to standards.
39.04	Practice standard precautions.
39.05	Stage patients and obtain vital signs.
39.06	Obtain patient histories.
39.07	Prepare and maintain examination and treatment area(s).
39.08	Prepare patient for examinations and/or minor office procedures.
39.09	Assist with examinations and/or minor office procedures.
39.10	Provide and document patient education.
39.11	Accurately record and report laboratory tests.
40.0	Display professional work habits integral to medical assisting. – The student will be able to:
40.01	Communicate appropriately in healthcare settings by listening, writing, speaking, and presenting with professional demeanor.
40.02	Collaborate, communicate and interact professionally with other healthcare professionals utilizing technology.
40.03	Contribute to team efforts by fulfilling responsibilities and valuing diversity.
40.04	Exercise proper judgment and critical thinking skills in decision making.

40.05	Adapt to changing organizational environments with flexibility.
40.06	Report as expected, on time, appropriately dressed and groomed and ready to work.
40.07	Model acceptable work habits as defined by company policy.
40.08	Complete and follow through on tasks using time management skills and take initiative as warranted.
40.09	Respond appropriately and quickly to patient's needs and concerns.
40.10	Practice etiquette and social sensitivity in face to face interaction, on the telephone, and the Internet.
40.11	Actively adhere to policies and procedures that protect the patient's confidentiality and privacy.
40.12	Understand resources related to patients' healthcare needs.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Although it is not required, it is strongly recommended that the programs meet the Standards and Guidelines of an Accredited Educational Program for the Medical Assistant adopted by the American Association of Medical Assistants and the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or the American Medical Technologist and the Accrediting Bureau of Health Education Schools (ABHES).

For further information contact:

#### **Commission on Accreditation of Allied Health Education Programs (CAAHEP)**

1361 Park Street  
Clearwater, FL 33756  
Phone: 727-210-2350  
Fax: 727-210-2354

Accrediting Bureau of Health Education Schools (ABHES)  
777 Leesburg Pike, Suite 312  
N. Falls, VA 22043  
(703) 917-9503

This Program Will Also Be In Accordance With Florida Statute Medical Assistants, 458.3485 F.S.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Program completers of a CAAHEP or ABHES accredited program are eligible to take the American Association of Medical Assistants' Certification Examination (CMA) or the American Medical Technologists' Certification Examination (RMA). For further information contact:

American Association of Medical Assistants (AAMA)  
20 North Wacker Drive, Suite 1575  
Chicago, Illinois 60606 (312/899-1500)

Or

American Medical Technologist (AMT)  
10700 West Higgins Road, Suite 150  
Rosemont, Illinois 60018 (800 275-1268)

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Pharmacy Technician  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

College Credit		Clock Hour Program
Program Number	N/A	H170700
CIP Number	0351080503	0351080507
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	40 credit hours	1050 clock hours
CTSO	HOSA: Future Health Professionals; Skills USA	HOSA: Future Health Professionals; Skills USA
SOC Codes (all applicable)	29-2052 Pharmacy Technicians	29-2052
Basic Skills Level:	N/A	Mathematics: 11 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as pharmacy technicians SOC 29-2052

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, health, safety, and environmental issues.



The content includes but is not limited to metric system, medical terminology, medicinal drugs, pharmaceutical compounding, USP 795 standards, sterile techniques, USP 797 and USP 800 standards, maintenance of inventory, IV preparation, receiving and handling of hazardous materials, preparing purchase orders, receiving and checking supplies purchased, printing labels, typing prescription labels, delivering medications, pricing prescription drug orders and supplies, prepackaging unit dose packages, patient record systems, control records, data processing automation in pharmacy, computer application, employability skills, leadership and human relations skills, health and safety, including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

**Regulated Programs**

**This program is regulated by the Florida Board of Pharmacy.**

This program must be approved by the Board of Pharmacy. Program completers who wish to work as Pharmacy Technicians in the State of Florida must register with the Board of Pharmacy (465.014 F.S.).

**Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 2 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	90 hours	31-9099
B	PTN0084	Pharmacy Technician 1	360 hours	29-2052
	PTN0085	Pharmacy Technician 2	300 hours	
	PTN0086	Pharmacy Technician 3	300 hours	

**College Credit**

When offered at the college credit level, this ATD program is part of the Pharmacy Management (AS/AAS) 1351080502/0351080502) and has a program length of 40 credits.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice human relations.
- 13.0 Identify pharmaceutical abbreviations and terminology as related to Community Pharmacy Practice.
- 14.0 Identify medical and legal considerations in various pharmacy settings.
- 15.0 Perform clerical duties as related to pharmacy practice.
- 16.0 Demonstrate knowledge of basic pharmaceutical chemistry and drug classification.
- 17.0 Demonstrate knowledge of inventory management.
- 18.0 Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice.
- 19.0 Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology.
- 20.0 Prepare and deliver medications.
- 21.0 Repackage unit dose medications.
- 22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Pharmacy Technician - ATD  
Career Certificate Program Number: H170700**

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: PTN0084  
Occupational Completion Point: B  
Pharmacy Technician 1 – 360 Hours – SOC Code 29-2052**

12.0	Practice human relation skills. - The student will be able to:
12.01	Explore the meaning and duties of a pharmacy technician.
12.02	Explore the organizational flow of responsibilities within a pharmacy setting.
12.03	Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04	Identify pharmacy organizations and their role in the profession to include student membership opportunities.
12.05	Identify the current trends and perspectives in the pharmacy practice.
12.06	Identify how team building can facilitate change within the pharmacy working environment.
12.07	Understand the importance of good interpersonal skills/soft skills in various pharmacy settings.
12.08	Demonstrate ethical conduct in job-related activities.
12.09	Identify State of Florida requirements for obtaining and maintaining pharmacy technician registration as well as continuing

	education requirements for renewal.
12.10	Explore the importance of national certification and the continuing education requirements for renewal.
13.0	Identify pharmaceutical abbreviations and terminology as related to pharmacy practice. - The student will be able to:
13.01	Utilize pharmaceutical medical terminology.
13.02	Analyze the major symbols and abbreviations used on prescriptions and state the meaning.
13.03	Identify safety strategies used to prevent medication errors due to pharmaceutical abbreviations and terminology.
14.0	Identify medical and legal considerations in various pharmacy settings. - The student will be able to:
14.01	Articulate the significance of current national and Florida law and administrative rules as they relate to the scope of practice for the pharmacy technician.
14.02	Convey an understanding of patient counseling requirements pertaining to OBRA-90 versus MTM (Medication Therapy Management).
14.03	Convey an understanding of medical legal concepts as they relate to the scope of practice for the pharmacy technician.
14.04	Explain the legal requirements for accurate pharmacy documentation and recordkeeping.
14.05	Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.
14.06	Convey an understanding of the patient's Bill of Rights as it relates to pharmacy practice.
14.07	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.
14.09	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials, the utilization of safety data sheets, and hazardous communication symbols.
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.11	Understand and explain the legal requirements for final check by the pharmacist.
14.12	Classify activities that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists.
14.13	Explain the importance of information technology (IT) and its current use in various pharmacy settings.
15.0	Perform clerical duties as related to pharmacy practice. - The student will be able to:
15.01	Demonstrate retail pharmacy dispensing processes.
15.02	Identify potential errors that may result in quality related events.

15.03	Utilize pharmacy software in processing pharmacy prescription data.
15.04	Identify and discuss applications of E-Prescribing and facsimile.
15.05	Utilize and apply interactive communication skills while gathering accurate information from patients and from other healthcare professionals.
15.06	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements.
15.07	Create, complete, and maintain patient profiles including third party billing information.
15.08	Understand the processes of third party billing, resolving rejections, and obtaining authorizations.
15.09	Demonstrate professional telephone communication skills within the scope of practice for the pharmacy technician.
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.
15.11	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to various pharmacy practices.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification. - The student will be able to:
16.01	Define the major classifications of pharmaceuticals.
16.02	Categorize at least one official compendia of standards for quality and purity of drugs and authoritative information on dosage, administration and therapeutic equivalents.
16.03	Utilize pharmacy reference manuals and web sites.
16.04	Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory management. - The student will be able to:
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.
17.02	Maintain controlled substance inventory.
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.
17.05	Create electronic purchase orders.
17.06	Accurately perform the process of purchasing, receiving, storing, distributing, and disposing of pharmaceutical supplies.
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.
17.08	Convey an understanding of the inventory control process implemented by Title II of the Drug Quality and Security Act.

18.0	Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice. - The student will be able to:
18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.
18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.
18.03	Perform common pharmaceutical calculations.
18.04	Identify common pharmaceutical weighing equipment.
18.05	Identify common pharmaceutical volume measurement equipment.
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.

**Course Number: PTN0085**  
**Occupational Completion Point: B**  
**Pharmacy Technician 2 – 300 Hours – SOC Code 29-2052**

19.0	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology. - The student will be able to:
19.01	Describe electrolyte balances and imbalances.
19.02	Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.
19.03	Demonstrate an understanding of common adult doses of medications, duration of common drug therapies, and respective contraindications including the BEERS Criteria.
19.04	Identify potential interactions that require a pharmacist's intervention pertaining to food/alcohol, herbal, OTC, and/or prescription medications.
20.0	Prepare and deliver medications. - The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Demonstrate institutional pharmacy dispensing processes.
20.03	Compare all new orders with medications listed on profiles while noting any changes.
20.04	Utilize special precautions in the preparation of medications for pediatric patients.
20.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.06	Understand how to correctly fill and deliver medication cassettes.

20.07 Collect data from medication administration record.

20.08 Demonstrate use of automated medication dispensing equipment.

**Course Number: PTN0086**  
**Occupational Completion Point: B**  
**Pharmacy Technician 3 – 300-Hours – SOC Code 29-2052**

21.0 Repackage unit dose medications. - The student will be able to:

21.01 Locate correct stock container.

21.02 Operate unit dose packaging equipment.

21.03 Measure, count, and place individual dose in appropriate containers.

21.04 Understand precautions used when packaging unit dose hazardous drugs.

21.05 Record repackaged medication data correctly.

21.06 Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to repackaging unit dose medication.

22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. - The student will be able to:

22.01 Convey an understanding of United States Pharmacopeia (USP) 797 regulations.

22.02 Convey an understanding of United States Pharmacopeia (USP) 800 regulations.

22.03 Compare medication order with label on vial and check expiration date of product.

22.04 Calculate drug dosage for parenteral use.

22.05 Understand common institutional drug names, dosages, and incompatibilities.

22.06 Reconstitute parenteral medications.

22.07 Demonstrate aseptic technique to withdraw medication from stock vial, measure correct quantity as instructed, select and insert it into IV solution without error.

22.08 Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.

22.09 Prepare parenteral solutions using proper aseptic technique.

22.10 Understand the preparation of Total Parenteral Nutrition (TPN) solutions.

22.11 Understand the preparation of chemotherapeutic agents using proper safety techniques.

22.12	Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
22.13	Place label on IV solution container and record appropriately.
22.14	Perform quality control check of completed product.
22.15	Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.
22.16	Convey an understanding of the proper storage and disposal of hazardous drugs.
22.17	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of sterile products.



**Florida Department of Education  
Student Performance Standards**

**Program Title:** Pharmacy Technician - ATD  
**ATD CIP Number:** 0351080503  
**SOC Code(s):** 29-2052

When this program is offered at the college level, the following standards and benchmarks apply:

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Pharmacy Technician (12-22)</b>	
12.0	Practice human relation skills. - The student will be able to:
12.01	Explore the meaning and duties of a pharmacy technician.
12.02	Explore the organizational flow of responsibilities within a pharmacy setting.
12.03	Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04	Identify pharmacy organizations and their role in the profession to include student membership opportunities.
12.05	Identify the current trends and perspectives in the pharmacy practice.
12.06	Identify how team building can facilitate change within the pharmacy working environment.
12.07	Understand the importance of good interpersonal skills/soft skills in various pharmacy settings.
12.08	Demonstrate ethical conduct in job-related activities.
12.09	Identify State of Florida requirements for obtaining and maintaining pharmacy technician registration as well as continuing education requirements for renewal.
12.10	Explore the importance of national certification and the continuing education requirements for renewal.
13.0	Identify pharmaceutical abbreviations and terminology as related to pharmacy practice. - The student will be able to:

13.01	Utilize pharmaceutical medical terminology.
13.02	Analyze the major symbols and abbreviations used on prescriptions and state the meaning.
13.03	Identify safety strategies used to prevent medication errors due to pharmaceutical abbreviations and terminology.
14.0	Identify medical and legal considerations in various pharmacy settings. - The student will be able to:
14.01	Articulate the significance of current national and Florida law and administrative rules as they relate to the scope of practice for the pharmacy technician.
14.02	Convey an understanding of patient counseling requirements pertaining to OBRA-90 versus MTM (Medication Therapy Management).
14.03	Convey an understanding of medical legal concepts as they relate to the scope of practice for the pharmacy technician.
14.04	Explain the legal requirements for accurate pharmacy documentation and recordkeeping.
14.05	Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.
14.06	Convey an understanding of the patient's Bill of Rights as it relates to pharmacy practice.
14.07	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.
14.09	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials, the utilization of safety data sheets, and hazardous communication symbols.
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.11	Understand and explain the legal requirements for final check by the pharmacist.
14.12	Classify activities that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists.
14.13	Explain the importance of information technology (IT) and its current use in various pharmacy settings.
15.0	Perform clerical duties as related to pharmacy practice. - The student will be able to:
15.01	Demonstrate retail pharmacy dispensing processes.
15.02	Identify potential errors that may result in quality related events.
15.03	Utilize pharmacy software in processing pharmacy prescription data.
15.04	Identify and discuss applications of E-Prescribing and facsimile.
15.05	Utilize and apply interactive communication skills while gathering accurate information from patients and from other healthcare professionals.

15.06	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements.
15.07	Create, complete and maintain patient profiles including third party billing information.
15.08	Understand the processes of third party billing, resolving rejections, and obtaining authorizations.
15.09	Demonstrate professional telephone communication skills within the scope of practice for the pharmacy technician.
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.
15.11	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to various pharmacy practices.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification. -The student will be able to:
16.01	Define the major classifications of pharmaceuticals.
16.02	Categorize at least one official compendia of standards for quality and purity of drugs and authoritative information on dosage, administration and therapeutic equivalents.
16.03	Utilize pharmacy reference manuals and web sites.
16.04	Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory management. - The student will be able to:
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.
17.02	Maintain controlled substance inventory.
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.
17.05	Create electronic purchase orders.
17.06	Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.
17.08	Convey an understanding of the inventory control process implemented by Title II of the Drug Quality and Security Act.
18.0	Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice. - The student will be able to:
18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.
18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.

18.03	Perform common pharmaceutical calculations.
18.04	Identify common pharmaceutical weighing equipment.
18.05	Identify common pharmaceutical volume measurement equipment.
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.
19.0	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology. - The student will be able to:
19.01	Describe electrolyte balances and imbalances.
19.02	Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.
19.03	Demonstrate an understanding of common adult doses of medications, duration of common drug therapies, and respective contraindications including the BEERS Criteria.
19.04	Identify potential interactions that require a pharmacist's intervention pertaining to food/alcohol, herbal, OTC, and/or prescription medications.
20.0	Prepare and deliver medications. - The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Demonstrate institutional pharmacy dispensing processes.
20.03	Compare all new orders with medications listed on profiles while noting any changes.
20.04	Utilize special precautions in the preparation of medications for pediatric patients.
20.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.06	Understand how to correctly fill and deliver medication cassettes.
20.07	Collect data from medication administration record.
20.08	Demonstrate use of automated medication dispensing equipment.
21.0	Repackage unit dose medications. - The student will be able to:
21.01	Locate correct stock container.
21.02	Operate unit dose packaging equipment.
21.03	Measure, count, and place individual dose in appropriate containers.

21.04	Understand precautions used when packaging unit dose hazardous drugs.
21.05	Record repackaged medication data correctly.
21.06	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to repackaging unit dose medication.
22.0	Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. - The student will be able to:
22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.
22.02	Convey an understanding of United States Pharmacopeia (USP) 800 regulations.
22.03	Compare medication order with label on vial and check expiration date of product.
22.04	Calculate drug dosage for parenteral use.
22.05	Understand common institutional drug names, dosages, and incompatibilities.
22.06	Reconstitute parenteral medications.
22.07	Demonstrate aseptic technique to withdraw medication from stock vial, measure correct quantity as instructed, select and insert it into IV solution without error.
22.08	Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.
22.09	Prepare parenteral solutions using proper aseptic technique.
22.10	Understand the preparation of Total Parenteral Nutrition (TPN) solutions.
22.11	Understand the preparation of chemotherapeutic agents using proper safety techniques.
22.12	Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
22.13	Place label on IV solution container and record appropriately.
22.14	Perform quality control check of completed product.
22.15	Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.
22.16	Convey an understanding of the proper storage and disposal of hazardous drugs.
22.17	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of sterile products.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical practicum experiences are an integral part of this program.

### **Special Notes**

Due to the clinical experiences students are engaged in through the program and to ensure the safety of both the students and the patients the recommended student to instructor ratio in the classroom is 20:1 and in the lab is 4:1.

It is recommended that program completers take national pharmacy technician certification exam offered by the Pharmacy Technician Certification Board, 2215 Constitution Ave, Washington, DC 20037-2985, (202) 429-7576. This certification is offered three times annually.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 11, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

## **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 40 credits. When offered at a technical center the standard length of this program is 1050 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.



Florida Department of Education  
Curriculum Framework

Program Title: Healthcare Support Specialist  
Career Cluster: Health Science

CCC	
CIP Number	0351081401
Program Type	College Credit Certificate (CCC)
Program Length	21 credit hours
CTSO	HOSA
SOC Codes	31-9099 Healthcare Support Workers, All Other

**Purpose**

This certificate program is part of the Medical Assisting Advanced AS degree program (1351080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

This program is designed to prepare students for employment as healthcare support workers SOC 31-9099.

The content includes but is not limited to assisting management by expediting and facilitating the maintenance and production of routine administrative and clinical tasks; performing medical administrative activities such as preparing and updating of patients' medical histories and discharge summaries; learn the special terminology and procedures associated with medicine and assist in the administration of policy. Emphasis is placed upon students' theoretical and clinical proficiency so they will be well prepared for employment as medical office support staff and healthcare support workers in medical offices, hospitals and other healthcare settings.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 02.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 03.0 Recognize and practice safety and security procedures.
- 04.0 Recognize and practice infection control procedures.
- 05.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS
- 06.0 Apply basic math and science skills.
- 07.0 Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states.
- 08.0 Describe the cardiovascular system.
- 09.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances
- 10.0 Practice infection control following standard precautions.

Florida Department of Education  
Student Performance Standards

Program Title:       Healthcare Support Specialist  
CIP Number:         0351081401  
Program Length:     21 credit hours  
SOC Code(s):        31-9099

**This certificate program is part of the Medical Assisting Advanced AS degree program (1351080103). At the completion of this program, the student will be able to:**

01.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
01.01	Develop basic speaking and listening skills.
01.02	Develop basic observational skills and related documentation strategies in written and oral form.
01.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
01.04	Respond to verbal and non-verbal cues.
01.05	Compose written communication using correct spelling, grammar, a formatting, confidentiality, and specific formats of letter writing.
01.06	Use appropriate medical terminology and abbreviations.
01.07	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
01.08	Recognize the importance of patient education regarding healthcare.
01.09	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic,, ethnic, and religious groups.
01.10	Adapt elements of communication using sender-receiver model.
01.11	Distinguish between and report subjective and objective information.
01.12	Report relevant information in order of occurrence.
02.0	Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:
02.01	Describe strategies for prevention of disease including health screenings and examinations.
02.02	Identify personal health practices and environmental factors which affect optimal function of the major body systems.

02.03	Identify psychological reactions to illness including defense mechanisms.
02.04	Identify complementary and alternative health practices.
03.0	Recognize and practice safety and security procedures – The student will be able to:
03.01	Recognize safe and unsafe working conditions and report safety hazards.
03.02	Demonstrate the safe use of medical equipment.
03.03	Identify and practice security procedures for medical supplies and equipment.
03.04	Demonstrate personal safety procedures based on the Occupations Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) regulations including standard precautions.
04.0	Recognize and practice infection control procedures. – The student will be able to:
04.01	Define principles of infection control including standard and transmission based precautions.
04.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
04.03	Describe how to correctly dispose of biohazardous materials according to appropriate government guidelines such as OSHA.
05.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
05.01	Recognize emerging diseases and disorders.
05.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.
05.03	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
05.04	Identify “at risk” behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
05.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following CDC guidelines.
05.06	Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.
06.0	Apply basic math and science skills. – The student will be able to:
06.01	Draw, read, and report on graphs, charts, and tables.
06.02	Measure time, temperature, distance, capacity, and mass/weight.
06.03	Make, use, and convert using both traditional and metric units.
06.04	Make estimations and approximations and judge the reasonableness of the result.

06.05	Convert from regular to 24 hour time.
06.06	Demonstrate the ability to evaluate and draw conclusions.
06.07	Organize and communicate the results obtained by observation and experimentation.
06.08	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of the such questions.
06.09	Calculate ratios.
07.0	Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states. – The student will be able to:
07.01	Define the terms Anatomy and Physiology.
07.02	Define both medical terms and abbreviations related to all body systems.
07.03	Define the principle directional terms, planes, quadrants and cavities used in describing the body and the association of body parts to one another.
07.04	Define the levels of organization of the body inclusive of, but not limited to, cells, organs and body systems.
07.05	Describe the function of the 11 major organ systems of the body (1) Integumentary, (2) skeletal, (3) muscular, (4) nervous, (5) endocrine, (6) circulatory (cardiovascular) (7) lymphatic, (8) respiratory, (9) digestive, (10) urinary, and (11) reproductive.
07.06	Describe symptoms and common disease pathology related to each body system and the relationship of the disease process to other body systems.
07.07	Discuss diagnostic options to identify common disease pathology and corresponding basic treatment.
07.08	Compare structure and function of the body across the life span.
08.0	Describe the cardiovascular system. – The student will be able to:
08.01	Locate the heart and surrounding structures.
08.02	Diagram and label the parts of the heart and list the functions of each labeled part.
08.03	Trace the flow of blood through the cardiopulmonary system.
09.0	Recognize and identify collection reagents supplies, equipment, and interfering chemical substances. – The student will be able to:
09.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
09.02	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
10.0	Practice infection control following standard precautions. – The student will be able to:
10.01	Describe and practice procedures for infection prevention including hand washing skills.

10.02 Discuss transmission based precautions.

10.03 Identify potential routes of infection and their complications.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Paramedic  
**Career Cluster:** Health Science

**CCC**

CIP Number	0351090405
Program Type	College Credit Certificate (CCC)
Program Length	42 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics

**Purpose**

This certificate program is part of the Emergency Medical Services AS degree program (1351090402).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This is an instructional program that prepares students for employment as paramedics SOC 29-2041 (Emergency Medical Technicians & Paramedics) to function at the basic pre-hospital paramedic level and treat various medical/trauma conditions, using appropriate equipment and materials. The program prepares students for certification as paramedics in accordance with Chapter 64J-1 of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation, National EMS Educational Standards for Paramedic. This is the second level for a career in emergency medical services in Florida.

The content includes but is not limited to: patient assessment, advanced airway management, cardiovascular emergencies, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, pharmacology, medication administration, respiratory emergencies, endocrine emergencies, acute abdomen, communicable diseases, patients with abnormal behavior,



substance abuse, the unconscious state, emergency childbirth, pediatric and geriatric emergencies, burns, environmental hazards, communications, documentation, extrication, mass casualty incident, incident command system, and transportation of patient.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### **Regulated Programs**

This program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome (SUIDS) training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. This program also meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

A Paramedic program must be taught by faculty meeting the qualifications as set forth in 64J-1.020 F. A. C.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6.

Field internship shall include a competency-based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include supervised experience in the field setting with a certified ALS transport EMS agency or ALS fire department. Refer to 64J-1.20 for additional requirements of the field internship inside of the paramedic program.

Pursuant F.S.401.2701 to Paramedic programs must be available only to Florida-certified emergency medical technicians or an emergency medical technician applicant who will obtain Florida certification prior to completion of phase one of the paramedic program and EMT certification must be maintained through the program.

It is strongly recommended this program be accredited by Commission on Accreditation of Allied Health Education Programs (CAAHEP). Beginning January 1, 2013, National Registry for Emergency Medical Technicians (NREMT) will require students applying for Paramedic National certification to be from a CAAHEP/CoAEMSP accredited program.

The Student Performance Standards for Paramedic were adapted and condensed from the most current US Department of Transportation, National EMS Educational Standards for the Paramedic. Administrators and instructors should refer to these materials for additional detail.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems.
- 02.0 Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice.
- 03.0 Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system.
- 06.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles.
- 07.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS.
- 08.0 Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems.
- 09.0 Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals.
- 10.0 Demonstrate a complex knowledge of pathophysiology of major systems.
- 11.0 Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development.
- 12.0 Demonstrate a fundamental knowledge of the principles of public health.
- 13.0 Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology.
- 14.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic.
- 15.0 Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic.
- 16.0 Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span.
- 17.0 Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span.
- 18.0 Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilator assessment and management across the life span.
- 19.0 Demonstrate a complex depth, comprehensive breadth of knowledge of scene management.
- 20.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations.
- 21.0 Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking.
- 22.0 Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic.
- 24.0 Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 25.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints.
- 26.0 Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span.
- 27.0 Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span.
- 28.0 Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span.

- 29.0 Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious diseases across the life span.
- 30.0 Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span.
- 31.0 Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span.
- 32.0 Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/ emergencies across the life span.
- 33.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span.
- 34.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 35.0 Demonstrate a complex depth, foundational breadth of knowledge of the assessment and management of hematology disorders/emergencies across the life span.
- 36.0 Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span.
- 37.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span.
- 38.0 Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 39.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose, and throat across the life span.
- 40.0 Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure.
- 41.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span.
- 42.0 Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span.
- 43.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 44.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 46.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.
- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span.
- 49.0 Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span.
- 50.0 Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span.
- 51.0 Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries.

- 52.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic.
- 53.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic.
- 54.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic.
- 55.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic.
- 56.0 Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span.
- 57.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 58.0 Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system.
- 59.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 60.0 Demonstrate a complex depth, comprehensive breadth of knowledge of air Medical transport risks, needs, and advantages.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 63.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

Florida Department of Education  
Student Performance Standards

Program Title: Paramedic  
CIP Number: 0351090405  
Program Length: 42 credit hours  
SOC Code(s): 29-2041

The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT standards and benchmarks”, please refer to the EMT curriculum framework for specific objectives.

**This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:**

01.0	<b>EMS Systems:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems. – The student will be able to:
01.01	Define terms, including but not limited to: EMS systems, licensure, registration, profession, professionalism, health care professional, ethics, peer review, medical direction, and protocols.
01.02	Describe the attributes of a paramedic as a health care professional.
01.03	Explain paramedic licensure/ certification, recertification, and reciprocity requirements in Florida.
01.04	Explain the importance of maintaining one’s paramedic license/certification.
01.05	Describe the benefits of paramedic continuing education.
01.06	Discuss the role of national associations and of a national certification agency.
01.07	Discuss Chapter 401, Florida Statutes, and Chapter 64-E, Florida Administrative Code.
01.08	Discuss the roles of various EMS standard setting agencies.
01.09	Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration.
01.10	Describe and demonstrate professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
01.11	Describe the role of the EMS physician in providing medical direction.
01.12	Discuss examples of local protocols.

01.13	Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
01.14	Describe the role of the paramedic relative to the safety of the crew, the patient, and bystanders.
01.15	Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders.
01.16	Advocate the need for injury prevention.
01.17	Discuss the diverse types of EMS services and differences in their provision of care.
02.0	<b>Research:</b> Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice. – The student will be able to:
02.01	Interpret results and reach conclusions.
02.02	Discuss the importance of evidenced based medicine and medical research and its role in refining EMS practices.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Discuss the concept of wellness and its benefits.
03.02	Discuss how cardiovascular endurance, muscle strength, and flexibility contribute to physical fitness.
03.03	Describe the impact of shift work on circadian rhythms.
03.04	Discuss the role of risk assessments and warning signs in cancer and cardiovascular disease.
03.05	Differentiate between proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
03.06	Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.
03.07	Describe the equipment available for self-protection when confronted with a variety of adverse situations.
03.08	Describe the three phases and factors that trigger the stress response.
03.09	Differentiate between normal/ healthy and detrimental reactions to anxiety and stress.
03.10	Identify and describe the defense mechanisms and management techniques and resources commonly used to deal with stress.
03.11	Describe the components of critical incident stress management (CISM).
03.12	Describe the needs of the paramedic when dealing with death and dying.
03.13	Discuss the importance of standard precautions and body substance isolation practices.
03.14	Discuss the need to treat each patient as an individual, with respect and dignity.

03.15	Discuss the need to respect the emotional needs of dying patients and their families.
03.16	Discuss the paramedics' role in performing community risk assessment.
04.0	<b>Documentation:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing. –The student will be able to:
04.01	Identify the general principles regarding the importance of EMS documentation and ways in which documents are used.
04.02	Demonstrate proper use of medical terminology.
04.03	Record pertinent administrative information to a given standard.
04.04	Analyze the documentation for accuracy and completeness, including spelling.
04.05	Describe the differences between subjective and objective elements of documentation.
04.06	Describe the potential consequences of illegible, incomplete, or inaccurate documentation.
04.07	Describe the special considerations concerning patient refusal of transport.
04.08	Explain how to properly record direct patient or bystander comments.
04.09	Describe the special considerations concerning mass casualty incident documentation.
04.10	Identify and record the pertinent, reportable clinical data of each patient interaction.
04.11	Note and record pertinent negative clinical findings.
04.12	Demonstrate proper completion of an EMS PCR (patient care record).
05.0	<b>EMS Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system. – The student will be able to:
05.01	Identify the role of verbal, written, and electronic communications in the provision of EMS.
05.02	Describe the phases of communications necessary for an emergency response and transport.
05.03	Discuss the importance of proper terminology when communicating during an emergency.
05.04	Discuss factors that impede or enhance effective verbal and written communications.
05.05	Discuss the legal implications of written communications.
05.06	Identify the components of the local EMS communications system and describe their function and use.
05.07	Identify and differentiate among the following communications systems: simplex, multiplex, duplex, trunked, digital communications, and cellular telephone.

05.08	Describe the functions and responsibilities of the Federal Communications Commission.
05.09	Describe how emergency medical dispatch (EMD) functions as an integral part of the EMS system.
05.10	List appropriate information to be gathered by the telecommunicator.
05.11	Demonstrate an organized and concise radio transmission
05.12	Demonstrate an organized and concise patient report upon transfer of care.
<b>06.0</b>	<b>Therapeutic Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles. –The student will be able to:
06.01	Identify internal and external factors that affect a patient/ bystander interview conducted by a paramedic.
06.02	Review the strategies for developing patient rapport.
06.03	Summarize the methods to assess mental status based on interview techniques.
06.04	Discuss the strategies for interviewing difficult patients.
06.05	Summarize developmental considerations across the life span that influence patient interviewing.
06.06	Review unique interviewing techniques necessary to employ with patients who have special needs.
06.07	Discuss interviewing considerations used by paramedics in cross-cultural communications.
<b>07.0</b>	<b>Medical/Legal and Ethics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS. – The student will be able to:
07.01	Differentiate between legal and ethical responsibilities.
07.02	Discuss State of Florida and Federal special reporting situations including:
07.02.01	abuse
07.02.02	sexual assault
07.02.03	gunshot and knife wounds
07.02.04	communicable disease
70.01.05	animal bites
07.03	Review terms, including but not limited to, the following: abandonment, battery, breach of duty, consent (expressed, implied, informed, voluntary), DNR orders, duty to act, emancipated minor, false imprisonment, liability, libel, negligence, proximate cause, scope of practice, slander, and tort.
07.04	Differentiate between the scope of practice and the standard of care for paramedic practice.
07.05	Discuss the concept of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the standard of care of a paramedic.
07.06	Review the four elements that must be present in order to prove negligence.



07.07	Review the legal concept and limitations of immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
07.08	Review the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
07.09	Review consent to include expressed, informed, implied, and involuntary.
07.10	Demonstrate appropriate patient management techniques in a refusal of care situation.
07.11	Discuss the issues of abandonment, negligence, false imprisonment, and battery and their implications to the paramedic.
07.12	Describe the actions that the paramedic should take to preserve evidence at a crime or accident scene.
07.13	Describe the importance of providing accurate communication (oral and written) in substantiating an incident.
07.14	Describe the criteria necessary to honor an advance directive in Florida.
08.0	<b>Anatomy and Physiology:</b> Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems. –The student will be able to:
08.01	Review the EMT standards and benchmarks for the anatomy & physiology.
08.02	Demonstrate comprehensive knowledge of anatomy and physiology as it applies to paramedic practice.
09.0	<b>Medical Terminology:</b> Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals. –The student will be able to:
09.01	Review the EMT standards and benchmarks for medical terminology.
09.02	Demonstrate a comprehensive knowledge of medical terminology as it applies to paramedic practice.
10.0	<b>Pathophysiology:</b> Demonstrate a complex knowledge of pathophysiology of major systems. – The student will be able to:
10.01	Describe the factors that precipitate disease in the human body including familial diseases and risk factors.
10.02	Describe environmental risk factors.
10.03	Define and discuss the pathogenesis, signs, and symptoms of distributive, obstructive, neurogenic, anaphylactic, and septic shock.
10.04	Discuss multiple organ dysfunction syndrome (MODS).
10.05	Describe alterations in cells and tissues including cellular adaptation, cellular injury, manifestation of cellular injury, and cellular death/necrosis.
10.06	Describe genetics and familial diseases and the role they play in pathophysiology.
10.07	Describe the self–defense mechanisms of inflammation and immune responses and their relationships to pathophysiology.

11.0	<b>Life Span Development:</b> Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development. –The student will be able to:
11.01	Compare, contrast, and analyze the physiological and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a fundamental knowledge of principles of public health. – The student will be able to:
12.01	Review the EMT standards and benchmarks for the public health.
12.02	Apply a fundamental knowledge of the principles of public health, epidemiology, health promotion, and illness and injury prevention.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology. –The student will be able to:
13.01	Differentiate among the chemical, generic (nonproprietary), and trade (proprietary) names of a drug.
13.02	List the four main sources of drug products.
13.03	Describe how drugs are classified.
13.04	List legislative acts controlling drug use and abuse in the United States.
13.05	Differentiate among Schedule I, II, III, IV, and V substances.
13.06	Use reference materials to research medications.
13.07	Discuss standardization of drugs.
13.08	Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
13.09	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
13.10	List and describe available drug forms.
13.11	List and differentiate all methods and routes of medication administration covered in the current National EMS Scope of Practice Model.
13.12	Describe the process of: <ul style="list-style-type: none"> <li>13.12.01 pharmacokinetics</li> <li>13.12.02 pharmacodynamics</li> <li>13.12.03 theories of drug action</li> <li>13.12.04 drug-response relationship</li> <li>13.12.05 factors altering drug responses</li> <li>13.12.06 predictable drug responses</li> <li>13.12.07 iatrogenic drug responses</li> <li>13.12.08 unpredictable adverse drug responses</li> </ul>
13.13	Discuss the prevention, recognition and management of adverse medication reactions.

13.14	Select the optimal medication and method of medication administration for patients with a particular clinical condition or situation.
14.0	<b>Medication Administration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic. –The student will be able to:
14.01	Review the specific anatomy and physiology pertinent to medication administration.
14.02	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
14.03	Review mathematical principles and demonstrate equations necessary for performing drug calculations.
14.04	Describe the indications, contraindications, procedure, equipment and risks associated with peripheral intravenous or external jugular access.
14.05	Describe the indications, equipment needed, technique used, precautions, and general principles of intraosseous needle placement and infusion.
14.06	Describe complications that can occur as a result of IV therapy.
14.07	Review the "six rights" of drug administration and correlate these with the principles of medication administration.
14.08	Describe the use of standard precautions and body substance isolation (BSI) procedures when administering a medication.
14.09	Prepare medications for administration from a variety of types of packaging, including vials, non-constituted vials, ampules, prefilled syringes, and packaging for intravenous solutions.
14.10	Describe the role of medical direction in medication administration and describe the difference between direct orders (online) and standing orders (off-line).
14.11	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the following routes: 14.11.01      inhalation route 14.11.02      gastric tube 14.11.03      rectal route
14.12	Differentiate among the different percutaneous routes of medication administration.
14.13	Describe the purpose, equipment needed, techniques used, complications, and general principles for obtaining a blood sample.
14.14	Obtain venous and capillary blood for testing and discuss blood chemistry and normal values.
14.15	Demonstrate principles of medical asepsis in the administration of medications.
14.16	Demonstrate the procedure for disposal of contaminated items and supplies.
14.17	Demonstrate cannulation of peripheral, intravenous and/or external jugular veins.
14.18	Demonstrate intraosseous access.

14.19	Demonstrate administration of medications by the following routes:
14.19.01	oral
14.19.02	sublingual
14.19.03	buccal
14.19.04	auto-injector
14.19.05	inhalation route
14.19.06	intranasal route
14.19.07	subcutaneous route
14.19.08	intramuscular route
14.19.09	intravenous route
14.19.10	intraosseous route
15.0	<b>Emergency Medications:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic. – The student will be able to:
15.01	Discuss medications used by the paramedic, including indications, contraindications, dosages, adverse reactions, side effects, and interactions for the following:
15.01.01	airway management
15.01.02	respiratory
15.01.03	cardiovascular
15.01.04	neurologic conditions
15.01.05	gastrointestinal
15.01.06	miscellaneous medications
16.0	<b>Airway Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span. –The student will be able to:
16.01	Explain the primary objective of airway maintenance.
16.02	Explain the differences in airway anatomy.
16.03	Define, identify and describe a tracheostomy, laryngectomy, stoma, and tracheostomy tube.
16.04	Describe the special considerations in airway management and ventilation for the pediatric patient.
16.05	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade.
16.06	Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.
16.07	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation.
16.08	Describe the indications, contraindications, advantages, disadvantages and complications for performing cricothyrotomy.
16.09	Demonstrate the procedure for percutaneous cricothyrotomy.
16.10	Review the function of the structures located in the upper and lower airway.

16.11	Demonstrate effective techniques of advanced airway management of the following:
16.11.01	orotracheal,
16.11.02	nasotracheal,
16.11.03	subglottic,
16.11.04	supraglottic,
79.22.05	digital intubation
16.12	Describe and demonstrate methods of assessment for confirming correct placement of any airway device.
16.13	Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation.
17.0	<b>Respiration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span. –The student will be able to:
17.01	List the concentration of gases that comprise atmospheric air.
17.02	Describe the measurement of oxygen in the blood.
17.03	Describe the measurement of carbon dioxide in the blood.
17.04	Describe peak expiratory flow.
17.05	Describe factors that cause decreased oxygen concentrations in the blood.
17.06	Describe the factors that increase and decrease carbon dioxide production in the body.
17.07	Define pulsus paradoxus.
17.08	Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
17.09	Review the physiology of ventilation and respiration.
18.0	<b>Ventilation:</b> Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilatory assessment and management across the life span. –The student will be able to:
18.01	Perform and interpret pulse oximetry and capnography.
18.02	Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV), BIPAP/CPAP, AND PEEP devices.
19.0	<b>Scene Size-Up:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of scene management. –The student will be able to:
19.01	Describe common hazards found at the scene of a trauma and a medical patient.
19.02	Discuss common mechanisms of injury/ nature of illness.
19.03	Explain the rationale for crew members to evaluate scene safety prior to entering.

19.04	Demonstrate the scene-size-up.
20.0	<b>Primary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations. –The student will be able to:
20.01	Summarize the elements of a general impression of the patient.
20.02	Explain the reason for performing a primary assessment.
20.03	Discuss and demonstrate methods of assessing levels of responsiveness using AVPU.
20.04	Discuss and demonstrate methods of assessing the airway across the life span.
20.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
20.06	Differentiate between a patient with adequate and inadequate breathing.
20.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
20.08	Discuss and demonstrate assessing the patient for external bleeding.
20.09	Describe and demonstrate the assessment and interruption of skin color, temperature, moisture, and capillary refill across the life span.
20.10	Explain the reasons for prioritizing a patient for care and transport.
20.11	Describe when it is appropriate to expose the patient completely.
20.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
21.0	<b>History Taking:</b> Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking. –The student will be able to:
21.01	Determine and investigate the chief complaint.
21.02	Describe the components of the patient history.
21.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
21.04	Acknowledge the feelings patients experience during assessment.
21.05	Discuss the value of obtaining a family and social history.
21.06	Describe examples of different techniques the paramedic may use to obtain information from patients, family, or bystanders during the history taking process.
22.0	<b>Secondary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span. –The student will be able to:
22.01	Review EMT standards and benchmarks for secondary assessment.

22.02	Describe the techniques of inspection, palpation, percussion, and auscultation.
22.03	Discuss the limitations of conducting a physical exam in the out-of-hospital environment.
22.04	Demonstrate the examination of the patient including all major body systems and anatomical regions.
22.05	Distinguish the importance of abnormal assessment findings in all the major body systems and anatomical regions.
22.06	Describe the evaluation of patient's perfusion status based on findings in the initial assessment.
22.07	State the reasons for performing a rapid trauma assessment.
22.08	Discuss the reason for performing a focused history and physical exam.
22.09	Discuss appropriate gender and cultural considerations regarding assessment.
22.10	Discuss medical identification devices/ systems.
23.0	<b>Monitoring Devices:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic. –The student will be able to:
23.01	Describe the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies, including but not limited to:
23.01.01	continuous ECG monitoring
23.01.02	12-Lead ECG
23.01.03	capnography (wave form)
23.01.04	co-oximetry
23.01.05	methemoglobin monitoring
23.01.06	total hemoglobin
23.01.07	basic blood chemistry
23.01.08	ultrasound
23.01.09	other devices identified at the EMT level
23.02	Demonstrate the use of the following patient monitoring technologies, including but not limited to:
23.02.01	continuous ECG monitoring
23.02.02	12-Lead ECG
23.02.03	capnography (wave form)
23.02.04	other devices identified at the EMT level
24.0	<b>Reassessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations. –The student will be able to:
24.01	Describe the components of reassessment and demonstrate the skills involved.
24.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
24.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.

24.04	Demonstrate reassessment of patients across the life span.
25.0	<b>Medical Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints. –The student will be able to:
25.01	Identify factors that complicate patient assessment including:
25.01.01	scene safety
25.01.02	environmental factors
25.01.03	chief complaint
25.01.04	paramedic preconceptions
25.01.05	distracting injuries
25.01.06	tunnel vision
25.01.07	patient cooperation
25.01.08	paramedic attitude
25.02	Discuss forming a field impression and utilizing available information to determine a different diagnosis.
26.0	<b>Neurology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span. – The student will be able to:
26.01	Identify the risk factors associated with nervous system dysfunction.
26.02	Review the anatomy and physiology of the organs and structures related to nervous system.
26.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with the following neurological conditions, including but not limited to:
26.03.01	coma
26.03.02	altered mental status
26.03.03	seizures
26.03.04	syncope
26.03.05	transient ischemic attack
26.03.06	stroke and intracranial hemorrhage
26.03.07	degenerative neurologic diseases
26.03.08	chronic alcoholism
26.03.09	back disorders
26.04	Describe and differentiate the major types of seizures.
26.05	Describe the types of stroke.
26.06	Describe the significance of the prevalence of neurologic disorders in the United States.
26.07	Discuss screen tools for assessment of stroke and large vessel occlusion.
26.08	Demonstrate the use of stroke screening tools and appropriate decision making regarding transport destination for a stroke patient.



27.0	<b>Abdominal and Gastrointestinal Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
27.01	Review the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
27.02	Differentiate between hemorrhagic and non-hemorrhagic causes of abdominal pain.
27.03	Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.
27.04	Discuss the pathophysiology, signs, and symptoms, and demonstrate the assessment, and management of patients with the following abdominal and gastrointestinal disorders, including but not limited to:
27.04.01	both upper and lower gastrointestinal bleeding
27.04.02	acute gastroenteritis.
27.04.03	colitis.
27.04.04	diverticulitis.
27.04.05	appendicitis.
27.04.06	peptic ulcer disease.
27.04.07	bowel obstruction.
27.04.08	Crohn's disease.
27.04.09	pancreatitis.
27.04.10	esophageal varices.
27.04.11	hemorrhoids.
27.04.12	cholecystitis.
27.04.13	acute hepatitis.
27.05	Identify patients at risk for gastrointestinal emergencies.
27.06	Demonstrate how to auscultate the abdomen to assess for diminished, absent or abnormal bowel sounds.
28.0	<b>Immunology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span. – The student will be able to:
28.01	Define and differentiate:
28.01.01	allergic reaction.
28.01.02	anaphylaxis
28.01.03	antigens
28.01.04	antibodies
28.01.05	anaphylactoid reaction
28.02	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
28.03	Describe the prevention of anaphylaxis and appropriate patient education.
28.04	Review the pathophysiology of allergy and anaphylaxis.
28.05	Describe the common methods of entry of allergens into the body.

28.06	Review common antigens most frequently associated with anaphylaxis.
28.07	Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis and allergic reaction.
29.0	<b>Infectious Diseases:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious disease across the life span – The student will be able to:
29.01	Review EMT standards and benchmarks for infectious disease.
29.02	Review the specific anatomy and physiology pertinent to infectious and communicable diseases.
29.03	Describe the steps of an infectious process.
29.04	Describe and differentiate infectious agents, including bacteria, viruses, fungi, protozoans, and helminths (worms).
29.05	Review characteristics of the immune system.
29.06	Perform an assessment of a patient with an infectious/communicable disease.
29.07	Effectively and safely manage a patient with an infectious/communicable disease.
29.08	Review public health principles related to infectious disease.
29.09	Review the roles of local, state, and federal agencies involved in infectious disease surveillance and outbreaks.
29.10	Describe the interactions of the agent, host, and environment as determining factors in disease transmission.
29.11	Describes the EMS professional's responsibilities as well as their rights under the Ryan White Act.
29.12	Discuss the pathophysiology, signs, symptoms, assessment, and management and risk factors of significant health concerns.
29.13	Discuss the characteristics of, and organisms associated with, febrile and afebrile respiratory disease.
29.14	Describe the EMS provider's role in patient education and preventing disease transmission.
29.15	Review the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS).
30.0	<b>Endocrine Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span. – The student will be able to:
30.01	Identify the risk factors related to disorders of the endocrine system.
30.02	Review the anatomy and physiology of organs and structures related to endocrinologic diseases.

30.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following endocrinologic emergencies:
30.03.01	hypoglycemia
30.03.02	hyperglycemia
30.03.03	diabetic ketoacidosis
30.03.04	Cushing's syndrome
30.03.05	adrenal insufficiency
30.03.06	pituitary disorders
30.03.07	thyroid disorders
31.0	<b>Psychiatric:</b> Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span. – The student will be able to:
31.01	Differentiate among behavior, psychiatric disorders, and behavioral emergencies.
31.02	Discuss the pathophysiology of common psychiatric disorders and behavioral emergencies.
31.03	Discuss the general factors that may cause an alteration in a patient's behavior.
31.04	Discuss the factors/signs or symptoms of various psychiatric emergencies to include suicide.
31.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
31.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
31.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
31.08	Describe the special considerations for the safety of the EMS provider, and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
31.09	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.10	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency and possible legal implication.
31.11	List the risk factors (including behaviors) for suicide.
32.0	<b>Cardiovascular:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/emergencies across the life span. – The student will be able to:
32.01	Describe the epidemiology, incidence, morbidity and mortality of cardiovascular disease.
32.02	Identify the risk factors of coronary artery disease.
32.03	Review the anatomy and physiology of the heart and circulatory system.
32.04	Discuss the electrophysiology of the heart.
32.05	Discuss and demonstrate ECG monitoring, 12 Lead placement, acquisition, and interpretation.

32.06	Define and give examples of positive and negative inotropes, chronotropes and dromotropes.
32.07	Identify the normal characteristics of the point of maximal impulse (PMI).
32.08	Discuss the normal and abnormal heart sounds and how they relate to hemodynamic events in the cardiac cycle.
32.09	Describe a systematic approach to the analysis and interpretation of cardiac dysrhythmias.
32.10	Describe the conditions of pulseless electrical activity.
32.11	Compare and contrast electrotherapy to include pacing.
32.12	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients following conditions including the development of a treatment plan, including but not limited to:
32.12.01	angina
32.12.02	myocardial infarction STEMI/Non-STEMI
32.12.03	congestive heart failure
32.12.04	cardiac tamponade
32.12.05	cardiogenic shock
32.12.06	hypertension and acute hypertensive states
32.12.07	cardiac arrest
32.12.08	vascular disorders
32.12.09	hypertrophic cardiomyopathies
32.12.10	infectious diseases of the heart
32.12.11	congenital abnormalities
32.13	List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.
32.14	Compare fibrinolysis from percutaneous intervention as reperfusion techniques used in patients with AMI or suspected AMI and describe the "window of opportunity" as it pertains to reperfusion of a myocardial infarction.
32.15	List the characteristics of a patient eligible for thrombolytic therapy.
32.16	Define the term acute pulmonary edema and describe its relationship to left ventricular failure.
32.17	Discuss preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.
32.18	Identify non-cardiac causes of cardiac arrest.
32.19	Discuss the components of post resuscitation care including how to determine the return of spontaneous circulation (ROSC).
32.20	Identify circumstances and situations where resuscitation efforts would not be initiated or would be terminated.

32.21	Demonstrate satisfactory performance of psychomotor skills of basic and advanced life support techniques according to the current American Heart Association guidelines or its equivalent, including:
32.21.01	cardiopulmonary resuscitation
32.21.02	defibrillation
32.21.03	synchronized cardioversion
32.21.04	transcutaneous pacing
33.0	<b>Toxicology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span. – The student will be able to:
33.01	Define and differentiate among toxicology, poisoning, and overdose.
33.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
33.02.01	food poisoning
33.02.02	carbon monoxide poisoning
33.02.03	cyanide poisoning
33.02.04	exposure to acid or alkaline substance
33.02.05	exposure to hydrocarbons
33.02.06	methanol ingestion
33.02.07	isopropanol ingestion
33.02.08	ethylene glycol ingestion
33.02.09	exposure to poisonous substances
33.02.10	drug withdrawal
33.02.11	alcoholic syndrome
33.02.12	withdrawal syndrome (including delirium tremens)
33.02.13	illicit drug use
33.02.14	Medication overdose
33.02.15	Opioid overdose
33.02.16	Organa phosphate overdose
33.03	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
33.04	Review various ways that toxins enter the body.
33.05	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
33.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
33.07	Review the following for Narcan (naloxone):
33.07.01	generic and trade names
33.07.02	medication forms
33.07.03	dose
33.07.04	administration
33.07.05	contraindications

34.0	<b>Respiratory:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span. – The student will be able to:
34.01	Discuss the epidemiology, morbidity, and mortality of respiratory illness in the United States.
34.02	Review hypoventilation and hyperventilation, and outline the conditions with which they are often associated.
34.03	Review the anatomy, physiology and functions of the respiratory system.
34.04	Discuss those factors that contribute to the formation of a general impression and degree of respiratory distress.
34.05	Identify breathing patterns that are associated with respiratory distress and neurologic insults and their correlation with the signs of increased work of breathing.
34.06	Review between normal and abnormal breath/lung sounds and its physiologic significance.
34.07	Explain the concepts of hypoxic drive and auto-PEEP as they relate to the COPD patient.
34.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following respiratory conditions, including but not limited to:
34.08.01	pulmonary infections (upper and lower airway)
34.08.02	atelectasis
34.08.03	anatomic or foreign body obstruction
34.08.04	aspiration
34.08.05	asthma
34.08.06	emphysema
34.08.07	chronic bronchitis
34.08.08	spontaneous pneumothorax
34.08.09	pleural effusion
34.08.10	pulmonary embolism
34.08.11	cancer
34.08.12	toxic inhalations
34.08.13	pulmonary edema
34.08.14	acute respiratory distress syndrome (ARDS)
34.08.15	pneumonia
34.08.16	neoplasms of the lung
34.08.17	hyperventilation syndrome
35.0	<b>Hematology:</b> Demonstrate a complex depth, foundational breadth of knowledge of the assessment, and management of hematology disorders/emergencies across the life span – The student will be able to:
35.01	Identify the role of heredity in the risk for hematologic disorders.
35.02	Review the anatomy and physiology of the hematopoietic system.
35.03	Describe volume and volume-control related to the hematopoietic system.

35.04	Explain the significance of the hematocrit with respect to red cell size and number.
35.05	Explain the correlation of the RBC count, hematocrit and hemoglobin values.
35.06	Recognize medications used to decrease the risk of thrombosis.
35.07	Identify blood groups.
35.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following conditions, including but not limited to:
35.08.01	anemia
35.08.02	leukemia
35.08.03	lymphomas
35.08.04	polycythemia
35.08.05	disseminated intravascular coagulopathy
35.08.06	hemophilia
35.08.07	sickle cell disease
35.08.08	multiple myeloma
35.08.09	leukopenia/neutropenia
35.08.10	leukocytosis
35.08.11	thrombocytosis
35.08.12	thrombocytopenia
35.08.13	transfusion complications
36.0	<b>Genitourinary/Renal:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span. – The student will be able to:
36.01	Describe the epidemiology, incidence, morbidity, mortality, and risk factors of urological emergencies.
36.02	Review the anatomy and physiology of the organs and structures related to urogenital diseases.
36.03	Discuss referred pain and visceral pain as it relates to urology.
36.04	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients of the following urologic and renal conditions, including but not limited to:
36.04.01	acute renal failure
36.04.02	chronic renal failure
36.04.03	complications related to hemodialysis and peritoneal dialysis.
36.04.04	renal calculi
36.04.05	priapism
36.04.06	testicular torsion
36.04.07	urinary tract infection
36.05	Review fluids, electrolytes, and acid based disturbances.

37.0	<b>Gynecology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span. – The student will be able to:
37.01	Review anatomy and physiology of the female reproductive system.
37.02	Identify the normal events of the menstrual and ovarian cycle.
37.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with specific gynecological emergencies, including but not limited to:
37.03.01	infection (including pelvic inflammatory disease, Bartholin’s abscess, and vaginitis/ vulvovaginitis)
37.03.02	ovarian cyst and ruptured ovarian cyst
37.03.03	ovarian torsion
37.03.04	endometriosis
37.03.05	dysfunctional uterine bleeding
37.03.06	prolapsed uterus
37.03.07	vaginal foreign body
37.03.08	vaginal hemorrhage
37.04	Describe the importance of maintaining a patient’s modesty and privacy while still being able to obtain necessary information.
37.05	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
38.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
38.01	Review the anatomy and physiology of the musculoskeletal system
38.02	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with musculoskeletal emergencies, including but not limited to:
38.02.01	osteomyelitis and tumors
38.02.02	disc disorders, lower back pain (cauda equine syndrome, sprain, and strain.)
38.02.03	joint abnormalities
38.02.04	muscle abnormalities
38.02.05	overuse syndrome
38.02.06	soft tissue infections
39.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose and throat across the life span. – The student will be able to:
39.01	Review the anatomy and physiology of the eyes, ears, nose, and throat.



39.02	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various eye diseases/injuries, including but not limited to:</p> <ul style="list-style-type: none"> <li>39.02.01 burns of eye and adnexa</li> <li>39.02.02 conjunctivitis</li> <li>39.02.03 corneal abrasions</li> <li>39.02.04 foreign body</li> <li>39.02.05 inflammation of the eyelid</li> <li>39.02.06 glaucoma</li> <li>39.02.07 hyphemia</li> <li>39.02.08 iritis</li> <li>39.02.09 papilledema</li> <li>39.02.10 retinal detachment and defect</li> <li>39.02.11 cellulitis of orbit</li> </ul>
39.03	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various ear diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.03.01 foreign body</li> <li>39.03.02 impacted cerumen</li> <li>39.03.03 labyrinthitis</li> <li>39.03.04 Meniere's disease</li> <li>39.03.05 otitis external and media</li> <li>39.03.06 perforated tympanic membrane</li> </ul>
39.04	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various nose diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.04.01 epistaxis</li> <li>39.04.02 foreign body intrusion</li> <li>39.04.03 rhinitis</li> <li>39.04.04 sinusitis</li> </ul>
39.05	<p>Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with oropharynx/throat diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.05.01 dentalgia and dental abscess</li> <li>39.05.02 diseases of oral soft tissue/ Ludwig's angina</li> <li>39.05.03 foreign body intrusion</li> <li>39.05.04 epiglottitis</li> <li>39.05.05 laryngitis</li> <li>39.05.06 tracheitis</li> <li>39.05.07 oral candidiasis</li> <li>39.05.08 peritonsillar abscess</li> <li>39.05.09 pharyngitis/tonsillitis</li> <li>39.05.10 temporomandibular joint disorders</li> </ul>
40.0	<p><b>Shock and Resuscitation:</b> Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure. – The student will be able to:</p>

40.01	Describe the epidemiology, including: premorbid and comorbid conditions and prevention strategies, for shock and hemorrhage.
40.02	Review the anatomy and physiology of the cardiovascular and respiratory systems.
40.03	Contrast the physiology of blood flow during normal states, peri-arrest, cardiac arrest and shock.
40.04	Discuss and demonstrate the assessment and management of shock.
40.05	Review the management of external hemorrhage.
40.06	Discuss appropriate fluid resuscitation.
40.07	Review the following for the cardiac arrest victim:
40.07.01	epidemiology
40.07.02	pathophysiology
40.07.03	physiology of blood flow during external chest compressions
40.07.04	resuscitation success/research
40.08	Review defibrillation and cardioversion to include manual techniques, automatic and semi-automated devices.
40.09	Discuss causes, pathophysiology, signs, and symptoms and management of special arrest and peri-arrest conditions, including but not limited to:
40.09.01	electrolyte disorders
40.09.02	toxic exposures
40.09.03	drowning
40.09.04	hypothermia
40.09.05	near-Fatal Asthma
40.09.06	anaphylaxis
40.09.07	trauma
40.09.08	pregnancy
40.09.09	electrical shock and lightning strikes
40.10	Review post resuscitative care include, temperature regulation, glucose/electrolyte management.
40.11	Discuss and demonstrate the assessment and management of internal hemorrhage.
40.12	Review the stages and classifications of hemorrhage.
40.13	Review the pathophysiology and demonstrate the assessment and management of the different types of shock.
40.14	Describe the effects of decreased perfusion at the capillary level.
40.15	Relate pulse pressure changes to perfusion status.
40.16	Relate orthostatic vital sign changes to perfusion status.

40.17	Define and differentiate between compensated and decompensated shock for all types of shock.
40.18	Discuss and differentiate the physiological manifestations of shock across the life span.
41.0	<b>Trauma Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span. – The student will be able to:
41.01	Review the pathophysiology of the trauma patient.
41.02	Review the components of comprehensive trauma systems and levels of trauma centers.
41.03	Review the considerations for different transportation modes to a trauma center.
41.04	Discuss the kinematics of blunt and penetrating trauma.
41.05	Discuss and describe significant and non-significant mechanism of injury (MOI) and provide examples of each.
41.06	Discuss and demonstrate the application of State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code.
41.07	Review the National Trauma Triage Protocol of Injured Patients.
41.08	Review forming a field impression and utilizing available information to determine a differential diagnosis.
41.09	Review the need for rapid intervention transport of the trauma patient.
42.0	<b>Bleeding:</b> Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span. – The student will be able to:
42.01	Review the compensatory mechanism in hemorrhagic shock.
42.02	Review the administration of medications to assist in the maintenance of homeostasis.
42.03	Review the maintenance of tissue oxygenation in a bleeding patient.
42.04	Discuss appropriate fluid resuscitation for the patient in hemorrhagic shock.
42.05	Review the different methods/modalities of controlling bleeding.
43.0	<b>Chest Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span. – The student will be able to:
43.01	Review the anatomy and physiology of the organs and structures related to thoracic injuries.

43.02	Review the pathophysiology, signs and symptoms and mechanism of injury (MOI) of the following injuries, including but not limited to:
43.02.01	myocardial injuries
43.02.01.1	pericardial tamponade
43.02.01.2	myocardial contusion
43.02.01.3	myocardial rupture
43.02.02	vascular injury
43.02.02.1.1	aortic dissection
43.02.02.1.2	pulmonary contusion
43.02.03	hemothorax
43.02.04	pneumothorax
43.02.05	hemopneumothorax
43.02.06	cardiac Tamponade
43.02.07	commotio cordis
43.02.08	tracheobronchial disruption
43.02.09	diaphragmatic rupture and injury
43.02.10	traumatic asphyxia
43.02.11	rib fracture
43.02.12	flail segment
43.02.13	sternal fracture
43.02.14	vascular injuries
43.02.15	impaled objects
43.02.16	evisceration/shock
43.03	Discuss monitoring of chest tubes.
43.04	Demonstrate the following techniques of management for thoracic injuries: needle decompression, elective intubation, ECG monitoring, oxygenation, and ventilation
44.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span. – The student will be able to:
44.01	Review the anatomy and physiology of organs and structures related to abdominal injuries.
44.02	Describe the mechanism of injury for and types of open and closed abdominal and retroperitoneal injuries involving seat belts, penetrating, blunt and evisceration.
44.03	Describe and demonstrate the pathophysiology, signs and symptoms and the assessment and management for, including but not limited to:
44.03.01	pelvic fractures.
44.03.02	solid organ injuries
44.03.03	hollow organ injuries
44.03.04	abdominal vascular injuries
44.03.05	retroperitoneal space (kidneys)
44.03.06	genitourinary system

44.04	Review the psychological considerations associated with genitourinary injuries.
45.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:
45.01	Review the anatomy and physiology of the musculoskeletal system, include the healing process.
45.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.
45.03	Define the different types of orthopedic trauma including fracture classifications.
45.04	List the 6 “P” orthopedic injury assessment.
45.05	Discuss the following management techniques: 45.05.01 heat therapy 45.05.02 cold therapy 45.05.03 splinting
45.06	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma including medication administration (analgesics and anxiolytics).
45.07	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.
45.08	Review age-associated changes in bones.
45.09	Define luxation and subluxation.
45.10	Explain the rationale for splinting at the scene versus load and go.
45.11	Demonstrate the proper use various splinting materials and devices to include improvised and traction splints.
45.12	Discuss and demonstrate the assessment and management of compartment and crush syndrome: 45.12.01 destination decision 45.12.02 rhabdomyolysis
45.13	Discuss the pathophysiology, and demonstrate the assessment and management of a tendon injury to the knee (patellar), shoulder, and Achilles.
45.14	Discuss the proper procedure to package an amputated body part for replantation.
46.0	<b>Soft Tissue Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
46.01	Review anatomy and physiology and identify the major functions of the integumentary system.

46.02	Discuss the pathophysiology of soft tissue injuries and the healing process including:
46.02.01	inflammation
46.02.02	epithelialization
46.02.03	neovascularization
46.02.04	collagen Synthesis
46.02.05	alterations in wound healing
46.02.06	abnormal scar formation
46.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
46.04	Identify types of burn injuries including:
46.04.01	thermal burn
46.04.02	chemical burn
46.04.03	electrical burn
46.04.04	radiation burn
46.05	Describe the depth classification of burn injuries including:
46.05.01	superficial burn
46.05.02	partial-thickness burn
46.05.03	full-thickness burn
46.05.04	other depth classification
46.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines”, the “rule of palms”, and other methods.
46.07	Explain how the seriousness of a burn is related to its depth and percentage of body surface area (BSA) involved.
46.08	Review the various management techniques for hemorrhage control.
46.09	Differentiate among the types of injuries requiring the use of occlusive versus non-occlusive dressing.
46.10	Demonstrate the proper use of any Morgan□type lens for irrigation of the eye.
46.11	Demonstrate the assessment and management of specific burn injuries including:
46.11.01	thermal
46.11.02	inhalation
46.11.03	chemical
46.11.04	electrical
46.11.05	radiation
46.12	Describe the pathophysiologic complications and systemic complications of a burn injury.
46.13	Discuss comorbidities in burn patients.
46.14	Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management.
46.15	Describe the types of chemicals and their burning processes and a chemical burn injury to the eye.

46.16	Discuss appropriate fluid resuscitation for burn patients.
47.0	<b>Head, Face, Neck, and Spine:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span. – The student will be able to:
47.01	Discuss types of and potential complications of facial injuries.
47.02	Discuss pathophysiology, signs and symptoms, assessment and management, and a field impression for injuries to the following areas:
47.02.01	eye(s)
47.02.02	nose
47.02.03	throat/neck
47.02.04	face
47.02.05	mouth
47.02.06	ear(s)
47.03	Distinguish between an open and closed head injury.
47.04	Define and explain the process involved with increasing ICP.
47.05	Describe and demonstrate the assessment and general management of the head/ brain injury patient, including pharmacological and non-pharmacological treatment.
47.06	Discuss the pathophysiology, signs and symptoms, and assessment and management for a patient for each of the following conditions:
47.06.01	skull fracture
47.06.02	cerebral contusion
47.06.03	intracranial hemorrhage
47.06.04	epidural, subdural, intracerebral, and subarachnoid
47.06.05	perforated tympanic membranes
47.06.06	orbital fracture
47.06.07	mandibular fracture
47.07	Review various methods for stabilization and removal of a helmet.
48.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span. – The student will be able to:
48.01	Review the anatomy and physiology of the central nervous system, brain, spinal cord, skull and spinal column.

48.02	Discuss pathophysiology, signs and symptoms, assessment, and management of the following nervous system injury including:
48.02.01	Cauda Equine syndrome
48.02.02	peripheral nerve injuries
48.02.03	intracerebral hemorrhage
48.02.04	cranial fractures
48.02.05	brain tissue injuries
48.02.06	spinal cord injuries
48.02.07	Brown-Sequard Syndrome
48.02.08	anterior cord syndrome
48.02.09	central cord syndrome
48.02.10	spinal shock
48.03	Discuss the mechanism of injury which would result in a nervous system injury.
48.04	Review the rationale for and potential for motion restriction for the entire spine when a cervical spine injury is suspected
48.05	Discuss the research involving the management of nervous system injuries and patient management.
49.0	<b>Special Considerations in Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span. – The student will be able to:
49.01	Integrate the assessment and management differences associated with the following special populations:
49.01.01	pregnancy
49.01.02	pediatric
49.01.03	geriatric
50.0	<b>Environmental Emergencies:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span. – The student will be able to:
50.01	Discuss the pathophysiology, signs and symptoms, assessment and management and MOI of the following:
50.01.01	drowning and water related incidents
50.01.02	temperature-related illness
50.01.03	bites and envenomation
50.01.04	diving injuries
50.01.05	lightning (electrical) injury
50.01.06	high altitude illness
50.02	Identify environmental factors that may cause illness, exacerbate preexisting illness and complicate treatment or transport decisions.
50.03	Review several methods of temperature monitoring.
50.04	Describe the general process of thermal regulation, including substances used and wastes generated.
50.05	Define fever and discuss its pathophysiologic mechanism.
50.06	Discuss the role of fluid therapy in the treatment of temperature related emergencies.



50.07	Review the gas laws related to the pathophysiology of injury in a submersion emergency.
50.08	Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving related illnesses.
50.09	Differentiate among the various treatments and interventions for the management of diving accidents.
50.10	Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.
51.0	<b>Multi-Systems Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries. – The student will be able to:
51.01	Review the priority of care in the multisystem trauma patient.
51.02	Explain which ALS interventions should occur prior to a transport decision and during transport.
52.0	<b>Obstetrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic. – The student will be able to:
52.01	Review the anatomy and physiology of the reproductive system.
52.02	Define the stages of labor and discuss how to assess them.
52.03	Differentiate between cephalic and abnormal delivery.
52.04	Describe the management of a patient with pre-delivery emergencies.
52.05	Discuss and demonstrate the patient care for all stages of labor in a cephalic delivery for the mother and the newborn.
52.06	Describe the procedures for handling complications of delivery.
52.07	Describe the management of the mother post-delivery.
52.08	Demonstrate the procedures for handling complications of pregnancy including per-eclampsia and high risk.
52.09	Describe the management of the mother post-delivery.
52.10	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
52.11	Describe special considerations when meconium is present in amniotic fluid or during delivery.
53.0	<b>Neonatal Care:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic. – The student will be able to:
53.01	Review the term neonate.
53.02	Identify antepartum and intrapartum factors that can affect the neonate.
53.03	Discuss pulmonary perfusion and asphyxia.

53.04	Calculate the Apgar score given various neonate situations.
53.05	Review resuscitation equipment and procedures for the neonate
53.06	Determine when an orogastric tube should be inserted during positive-pressure ventilation.
53.07	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
53.07.01	apnea
53.07.02	bradycardia
53.07.03	acidosis
53.07.04	pneumothorax
53.07.05	meconium-stained
53.07.06	low blood volume
53.07.07	dysphemistic hernia
53.07.08	respiratory distress
53.07.09	respiratory depression secondary to narcotics
53.07.10	low birth weight
53.07.11	seizures
53.07.12	hypoglycemia
53.07.13	diarrhea
53.07.14	jaundice
53.07.15	fever
53.07.16	hypothermia
53.07.17	birth injuries
53.07.18	cardiac conditions
53.08	Discuss post arrest management of the neonate.
53.09	Discuss vascular access cannulation techniques for a newborn including umbilical vein/artery access.
54.0	<b>Pediatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic. – The student will be able to:
54.01	Discuss key anatomical, physiological, and developmental characteristics of infants and children and their implications.
54.02	Review and demonstrate techniques for successful assessment and treatment of infants and children.
54.03	Review airway and ventilatory considerations and procedures for pediatric patients.
54.04	Discuss the indications and methods for gastric decompression for infants and children.

54.05	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
54.05.01	altered level of consciousness
54.05.02	trauma
54.05.03	hypo-perfusion
54.05.04	respiratory distress/failure
54.05.05	cardiac dysrhythmia
54.05.06	neurological emergency
54.05.07	abuse/neglect
54.05.08	SUIDS
54.05.09	FABO
54.05.10	respiratory emergencies
54.05.11	congenital heart disease
54.05.12	hydrocephalus/VP shunts
54.06	Discuss the appropriate procedure and equipment for vascular and intraosseous access.
54.07	Review basic cardiac life support (CPR) guidelines for infants and children.
54.08	Integrate advanced life support skills with basic cardiac life support for infants and children.
54.09	Discuss the indications, dosage, route of administration and special considerations for medication administration in infants and children.
54.10	Describe Sudden Unexplained Infant Death Syndrome (SUIDS), current theories, assessment and management, and the immediate needs of the family.
54.11	Discuss the parent/caregiver responses to the death of an infant or child.
54.12	Discuss and demonstrate the use of a length-based resuscitation tape and other methods for determining equipment sizes, drug doses, and other pertinent information for a pediatric patient.
54.13	Discuss proper placement of a gastric tube in infants and children.
54.14	Review appropriate routes and techniques for medication administration.
54.15	Demonstrate appropriate parent/caregiver interviewing techniques for infant and child death situations.
55.0	<b>Geriatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic. – The student will be able to:
55.01	Review and discuss the term geriatrics
55.02	Review the anatomy, physiology, and pathophysiology of the geriatric patient.
55.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
55.04	Discuss the importance of fall prevention with the geriatric patient.

55.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
55.06	Describe the common causes, assessment and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.07	Discuss the impact of polypharmacy and medication non-compliance on patient assessment and management.
55.08	Discuss medication issues of the elderly including polypharmacy, dosing errors and increased drug sensitivity and toxicology.
56.0	<b>Patients with Special Challenges:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span. – The student will be able to:
56.01	Discuss the special considerations required when providing emergency care to patients with:
56.01.01	abuse/neglect of vulnerable populations
56.01.02	homelessness
56.01.03	poverty
56.01.04	bariatrics
56.01.05	tech dependent
56.01.06	hospice/terminally ill
56.01.07	tracheostomy
56.01.08	home care
56.01.09	sensory deficit/loss
56.01.10	developmental disability
56.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
56.02.01	respiratory devices
56.02.02	cardiac devices
56.02.03	gastro-urinary devices
56.02.04	central & peripheral IV catheters
56.03	Describe home care and the types of patients it serves and the services it encompasses.
56.04	Describe the characteristics associated with the profile of the typical abuser of:
56.04.01	domestic abuser
56.04.02	elder abuser
56.04.03	child abuser
56.05	Discuss the role of the Paramedic as a patient advocate for vulnerable populations.
56.06	Differentiate between hospice/palliative care and curative care.
56.07	Describe paraplegia/quadriplegia.
56.08	Describe the various etiologies of mental illness.

56.09	Recognize the presenting signs of the following:
56.09.01	autism spectrum
56.09.02	developmental disability
56.09.03	down's syndrome
56.10	Describe the following diseases/illnesses and identify each of their possible presenting signs, including but not limited to:
56.10.01	arthritis
56.10.02	cancer
56.10.03	cerebral palsy
56.10.04	cystic fibrosis
56.10.05	multiple sclerosis
56.10.06	muscular dystrophy
56.10.07	myasthenia gravis
56.10.08	poliomyelitis
56.10.09	spina bifida,
56.10.10	patients with a previous head injury
56.10.11	mental illness
56.11	Review hospice care, comfort care and DNR/DNAR as they relate to local practice, law and policy.
56.12	Describe the access and discuss indwelling catheters, implanted central IV ports and central line monitoring.
56.13	Describe complications of assessing each of the airway, vascular access, and GI/GU devices.
56.14	Identify and describe the failure of wound drains.
56.15	Review the rights of the terminally ill.
56.16	Demonstrate proper tracheotomy care.
56.17	Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
57.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
57.01	Review the EMT standards and benchmarks for the Principles of Safely Operating a Ground Ambulance.
58.0	<b>Incident Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
58.01	Review the EMT standards and benchmarks for Incident Management and apply a complex depth and comprehensive breadth of establishing and working within the incident management system.
59.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
59.01	Review the EMT standards and benchmarks for Multiple Casualty Incidents.

60.0	<b>Air Medical:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of air medical transport risks, needs and advantages. – The student will be able to:
60.01	Describe the advantages and disadvantages of air medical transport.
60.02	Identify appropriate reasons for the use of air medical for emergency patient transport.
60.03	Describe the risks involved with the use of air medical transport.
60.04	Demonstrate the actions needed to ensure effective and safe ground operations involving air medical response.
60.05	Demonstrate appropriate communication of information needed for safe and effective interaction between the air medical crew and ground personnel.
61.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:
61.01	Review the EMT standards and benchmarks for Vehicle Extrication.
62.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
62.01	Review the EMT standards and benchmarks for Hazardous Materials Awareness.
63.0	<b>Mass Casualty Incidents due to Terrorism and Disasters:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
63.01	Review the EMT standards and benchmarks for Mass Casualty Incidents.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

**The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT Objectives.” Please refer to the EMT curriculum framework for specific objectives.**

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Emergency Medical Technician  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	College Credit	Clock Hour Program
Program Number	N/A	W170212
CIP Number	0351090408	0351090413
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	12 credit hours	300 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics 31-9099 Healthcare Support Workers, All Other	29-2041 Emergency Medical Technicians and Paramedics 31-9099 Healthcare Support Workers, All Other
Basic Skills Level:	N/A	

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This is an instructional program that prepares students for employment as emergency medical technicians SOC Code 29-2041 (Emergency Medical Technicians and Paramedics) to function at the basic pre-hospital emergency medical technician level and treat various medical/trauma conditions using appropriate equipment and materials. The program prepares students for certification as EMT's in accordance with Chapter 64J of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation (DOT) National EMS Education Standards for EMT. This is the initial level for a career in emergency medical services and the primary prerequisite for paramedic training and certification.

The content includes but is not limited to patient assessment, airway management, cardiac arrest, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, acute abdomen, communicable diseases, patients with abnormal behavior, alcohol and drug abuse, the unconscious state, emergency childbirth, burns, environmental hazards, communications,



reporting, extrication and transportation of patient. The student must be proficient in patient assessment and evaluation, the use of suctioning devices, oral and nasal airways, resuscitation devices, oxygen equipment, sphygmomanometer and stethoscope, splints of all types, pneumatic anti-shock garments, extrication tools, dressings and bandages, stretchers and patient carrying devices.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### **Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

### **Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 1 occupational completion point and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	EMS0110	Emergency Medical Technician (EMT)	300 hours	29-2041

### **College Credit**

When offered at the college credit level, this ATD program is part of the Emergency Medical Services (1351090402) program and has a length of 12 credits.

### **Regulated Programs**

This program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome (SUIDS) training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. This program also meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

Please refer to chapter 401 F.S. for more information on disqualification for the EMT license through the Office of Emergency Medical Services (EMS), Department of Health.

An EMT program must be taught by an instructor meeting the qualifications as set forth in 64J-1.0201 FAC.

Students must complete this program, or demonstrate the mastery of skills standards contained in this program, before advancing in either of the other programs in this cluster. Completion of this program should prepare the student for the certification examination approved for the state of Florida.

An American Heart Association or Red Cross certification or equivalent in "professional" BLS is required of all candidates for entrance into an EMT program.

The Student Performance Standards for Emergency Medical Technology-EMT were adapted from the US Department of Transportation (DOT) National EMS Educational Standards for EMT.

Once students have successfully completed the EMT Program, they may be given a certificate stating they have met all Emergency Medical Responder competency requirements.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6. Hospital activity shall include a minimum of 20 hours of supervised clinical supervision, including 10 hours in a hospital emergency department. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

Field internship shall include a competency based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include a minimum of 5 emergency runs resulting in patient care and transport appropriate for the EMT. In addition, the patient care component should include minimum competencies in patient assessment, airway management and ventilation, trauma and medical emergencies.

It is strongly recommended this program be accredited by Commission on Accreditation of Allied Health Education Programs (CAAHEP).

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a simple depth, foundational breadth of knowledge of EMS systems.
- 02.0 Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making.
- 03.0 Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication.
- 06.0 Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication.
- 07.0 Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics.
- 08.0 Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS.
- 09.0 Demonstrate a fundamental knowledge in the use of medical terminology.
- 10.0 Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation.
- 11.0 Demonstrate a fundamental knowledge of life span development to patient assessment and management.
- 12.0 Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care.
- 13.0 Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency.
- 14.0 Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT.
- 15.0 Demonstrate a foundational depth, fundamental breadth of knowledge of airway management across the life span within the scope of practice of the EMT.
- 16.0 Demonstrate a fundamental depth, foundational breadth of knowledge of respiration.
- 17.0 Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span.
- 18.0 Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations.
- 19.0 Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations.
- 20.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking.
- 21.0 Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment.
- 22.0 Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 24.0 Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints.
- 25.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span.
- 26.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span.
- 27.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span.

- 28.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span.
- 29.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span.
- 30.0 Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span.
- 31.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span.
- 32.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span.
- 33.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 34.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span.
- 35.0 Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergencies across the life span.
- 36.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span.
- 37.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 38.0 Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span.
- 39.0 Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span.
- 40.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span.
- 41.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span.
- 42.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 43.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 44.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.
- 46.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck, and spine trauma across the life span.

- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of trauma patients with special considerations across the life span.
- 49.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of environmental emergencies across the life span.
- 50.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span.
- 51.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT.
- 52.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT.
- 53.0 Demonstrate a fundamental depth, fundamental breath of knowledge of the management of the pediatric patient within the scope of practice of the EMT.
- 54.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT.
- 55.0 Demonstrate a simple depth, simple breadth of knowledge of management of the patient with special challenges across the life span.
- 56.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 57.0 Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system.
- 58.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 59.0 Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response.
- 60.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

Florida Department of Education  
Student Performance Standards

Program Title: Emergency Medical Technician –ATD  
Career Certificate Program Number: W170212

<b>Course Number: EMS0110</b> <b>Occupational Completion Point: A</b> <b>Emergency Medical Technician – 300 Hours – SOC Code 29-2041</b>	
<b>This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:</b>	
01.0	<b>EMS Systems:</b> Demonstrate a simple depth, foundational breadth of knowledge of EMS systems. – The student will be able to:
01.01	Define Emergency Medical Services (EMS) systems.
01.02	Discuss the historical background of the development of the EMS system.
01.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT and PM) as well as the three levels (EMR, EMT, and PM) in the State of Florida.
01.04	Discuss the specific statutes and regulations regarding the EMS system in Florida.
01.05	Discuss vehicle and equipment readiness.
01.06	Characterize the EMS system’s role in prevention and public education.
01.07	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
01.08	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.
01.09	Discuss the maintenance of and differences between certification and licensure for the EMS professional in the State of Florida and NREMT.
01.10	Define quality improvement and discuss the EMT’s role in the process.
01.11	Identify the basics of common methods of payment for healthcare services.
01.12	Analyze attributes and attitudes of an effective leader.
01.13	Demonstrate effective techniques for managing team conflict.
01.14	Describe factors that influence the current delivery system of healthcare.

01.15	Discuss the importance of continuing medical education and skills retention.
01.16	Assess personal attitudes and demeanor that may distract from professionalism.
01.17	Serve as a role model and exhibit professional behaviors in the following areas:
01.17.01	integrity
01.17.02	empathy
01.17.03	self-motivation
01.17.04	appearance and personal hygiene
01.17.05	self-confidence
01.17.06	communications ( including phone, email and social media etiquette)
01.17.07	time management
01.17.08	teamwork and diplomacy
01.17.09	respect
01.17.10	patient advocacy (inclusive of those with special needs, alternate life styles and cultural diversity)
01.17.11	careful delivery of service
02.0	<b>Research:</b> Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making. – The student will be able to:
02.01	Discuss EMS research and evidence based decision making
02.01.01	Conduct scientific literature searches
02.01.02	Read, interpret, and extract information from journal articles relevant to a project
02.02	Explain the importance of assessing and treating patients based on evidence based decision-making.
02.03	Interpret graphs, charts, and tables.
02.04	Measure time, temperature, distance, capacity, and mass/weight.
02.05	Convert and use traditional and metric units.
02.06	Make estimations, approximations and judge the reasonableness of the result.
02.07	Convert time from a 12 hour format to a 24 hour format
02.08	Demonstrate ability to evaluate and draw conclusions.
02.09	Calculate ratios.
02.10	Explain the rationale for the ems system gathering data.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Explain the need to determine scene safety.

03.02	Discuss the importance of body substance isolation (BSI).
03.03	Describe the steps and equipment the EMT should take for personal protection from airborne and blood borne pathogens and communicable disease.
03.04	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
03.05	Discuss the steps the EMT should take when approaching a family confronted with death and dying.
03.06	Recognize the warning signs of personal stress and discuss the strategies and resources available for EMTs to utilize.
03.07	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
03.08	Discuss the guidelines and safety precautions to be followed when lifting and moving patients and equipment.
03.09	Discuss patient positioning in common emergency situations.
03.10	Discuss situation that may require the use of medical restraints on the patient and explain guidelines and safety consideration for their use.
03.11	Define “infectious disease” and “communicable disease.”
03.12	Describe the routes of transmission and associated risks for infectious disease.
03.13	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis and HIV.
03.14	Explain how immunity to infectious diseases is acquired.
03.15	Explain post exposure management of exposure to patient blood or body fluids, including proper notification documentation.
03.16	Describe the components of physical fitness and mental wellbeing.
03.17	Identify personal health practices and environmental factors, which affect physical, mental, and emotional wellbeing.
03.18	Discuss complementary and alternative health practices.
03.19	Explain the basic concepts of positive self-image, wellness and stress.
03.20	Discuss the need for a wellness and stress control plan that can be used in personal and professional life.
03.21	Explore the importance of adequate nutrition (i.e. U.S. Department of Agriculture’s MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> )).
03.22	Demonstrate safe behaviors in the proper use of medical equipment.
03.23	Explain the theory of root- cause analysis.
03.24	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.



03.25	Identify and practice security procedures for medical supplies and equipment in the various healthcare settings.
03.26	Describe fire, safety, disaster and evacuation procedures in the various healthcare settings.
03.27	Discuss applicable accrediting and regulatory agency patient safety guidelines.
04.0	<b>Documentation:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing. – The student will be able to:
04.01	Discuss applications of technology in healthcare.
04.02	Demonstrate basic computer skills.
04.03	Interpret and utilize information from electronic health records.
04.04	Identify methods of electronic communication to access and distribute data.
04.05	Describe the use and importance of properly written communication and patient care documentation.
04.06	Explain the legal implication of the patient care report.
04.07	Identify the minimum dataset reference patient information and administrative information on the patient care report.
04.08	Understand how to document refusal of care, including legal implications.
04.09	Discuss the implications of the Health Insurance Portability and Accountability Act of 1996 on confidential documentation.
04.10	Describe the special considerations concerning mass casualty incident documentation.
04.11	Demonstrate completion of a patient care report for a medical and trauma patient.
05.0	<b>EMS System Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication. – The student will be able to:
05.01	Understand the basic principles of the various types of communications equipment used in EMS.
05.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.
05.03	Explain the rationale for providing efficient and effective radio communications and patient reports.
05.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
05.05	Perform an organized and concise radio transmission.
05.06	Perform an organized, concise verbal patient report that would be given to the staff at a receiving facility.
05.07	Perform a brief, organized verbal report that would be given during transfer of care at an incident scene.

06.0	<b>Therapeutic Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication. – The student will be able to:
06.01	Describe principles of therapeutic and effective communication with patients.
06.02	Discuss basic speaking and active listening skills.
06.03	Recognize the importance of patient/client educations regarding healthcare.
06.04	Discuss the adjustment of communication strategies to effectively communicate with patients with:
06.04.01	differing age groups
06.04.02	differing developmental stages
06.04.03	special needs
06.04.04	differing cultures, including language barriers
06.05	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
06.06	Discuss the strategies for interviewing persons in special situations.
06.07	Distinguish between and respond to verbal and non-verbal cues.
06.08	Analyze elements of communication using a sender-receiver/close loop model.
06.09	Exhibit positive non-verbal behaviors.
06.10	Establish proper patient rapport.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics. – The student will be able to:
07.01	Discuss the rational, importance, and limitations of patient autonomy.
07.02	Differentiate between expressed, implied and involuntary consent.
07.03	Discuss the methods of obtaining consent and procedures for minors.
07.04	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
07.05	Discuss the implications for the EMT in patient refusal of care and/or transport.
07.06	Explain the importance, necessity and legality of patient confidentiality.
07.07	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
07.08	Discuss State of Florida and Federal special reporting situations including:
07.08.01	abuse
07.08.02	sexual assault
07.08.03	gunshot and knife wounds

07.08.04	communicable disease
07.08.05	animal Bites
07.09	Differentiate between civil tort and criminal actions.
07.10	Discuss the elements of negligence and defenses/protections from liability.
07.11	Discuss the role of the EMT at crime scenes and preservation of evidence.
07.12	Define ethics and morality and discuss their implication for the EMT.
07.13	Discuss Florida legislation such as:
07.13.01	Baker Act (FS 394.451)
07.13.02	Marchman Act (FS 397.601 and FS 397.675)
07.13.03	Emergency Examination and Treatment of Incapacitated Persons Act (FS 401.445)
07.14	Differentiate between the scope of practice and the standard of care as applied to the EMT.
07.15	Discuss the legal concepts and limitations of immunity, including Good Samaritan statutes and governmental immunity.
07.16	Describe the appropriate patient management and care techniques in a refusal of care situation.
07.17	Analyze the relationship between the law, morals and ethics in EMS and the premise that should under lie the EMTs ethical decisions.
07.18	Describe the criteria necessary to honor an advance directive.
07.19	Explain the rationale for the needs, benefits and varying degrees of advance directives.
08.0	<b>Anatomy and Physiology:</b> Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. – The student will be able to:
08.01	Identify the following topographic terms:
08.01.01	medial
08.01.02	lateral
08.01.03	proximal
08.01.04	distal
08.01.05	superior
08.01.06	inferior
08.01.07	anterior
08.01.08	posterior
08.01.09	midline
08.01.10	right and left
08.01.11	mid-clavicular
08.01.12	bilateral
08.01.13	mid-axillary
08.02	Describe the life support chain, aerobic metabolism, and anaerobic metabolism.

08.03	Define anatomy, physiology, pathophysiology, and homeostasis.
08.04	Identify and describe the anatomical structures and functions of the following:
08.04.01	skeletal system
08.04.02	muscular system
08.04.03	respiratory System
08.04.04	circulatory/ Cardiovascular system
08.04.05	nervous System
08.04.06	integumentary system
08.04.07	digestive system
08.04.08	endocrine system
08.04.09	renal system
08.04.10	reproductive system
08.04.11	lymphatic System
08.05	Explain cellular anatomy and physiology.
08.06	Explain cellular respiration.
08.07	Discuss cell division.
08.08	Describe the different types of muscle tissues including skeletal, smooth and cardiac.
08.09	Name and identify the location of the bones of the axial and appendicular skeleton.
08.10	Describe the classification and types of joints.
08.11	Discuss the mechanisms of breathing including:
08.11.01	mechanical ventilation
08.11.02	pulmonary volumes
08.11.03	dead space
08.11.04	lung compliance
08.12	Explain the diffusion of gases in external and internal respiration.
08.13	Describe oxygen and carbon dioxide transport in the blood.
08.14	Describe nervous and chemical mechanisms that regulate respirations.
08.15	Discuss respiration and acid-base balance.
08.16	Discuss the hemodynamics of blood pressure.
08.17	Discuss the role of nutrition, metabolism and body temperature on body function.
08.18	Describe the causes, advantages, and disadvantages of a fever.

08.19	Discuss the hypothalamus functions as the thermostat in the body.
09.0	<b>Medical Terminology:</b> Demonstrate a fundamental knowledge in the use of medical terminology. – The student will be able to:
09.01	Identify medical terminology word parts such as:
09.01.01	root words
09.01.02	prefixes
09.01.03	suffixes
09.01.04	combining forms
09.02	Correctly utilize medical terminology describing each of the following:
09.02.01	body structures
09.02.02	functions
09.02.03	conditions and disorders
09.02.04	body regions
09.02.05	cavities
09.02.06	areas
09.02.07	landmarks
09.03	Correctly use medical abbreviations and symbols.
09.04	Read and understand basic medical documentation in medical records and medical reports.
09.05	Communicate with healthcare professionals utilizing basic medical terminology.
09.06	Explain the rationale for using accepted medical terminology correctly.
10.0	<b>Pathophysiology:</b> Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation. – The student will be able to:
10.01	Discuss signs of irreversible death.
10.02	Review the anatomy and physiology of the respiratory and cardiovascular systems.
10.03	Discuss and identify the pathophysiology of respiratory failure and respiratory and cardiac arrest.
10.04	Understand shock, including the pathophysiology, causes, and the signs and symptoms associated with the various types of shock.
10.05	Discuss the variations in the pathophysiology of shock across the life span.
11.0	<b>Life Span Development:</b> Demonstrate a fundamental knowledge of life span development to patient assessment and management. – The student will be able to:
11.01	Describe the major physiologic and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care. – The student will be able to:

12.01	Define public health and explain the goal of the public health field.
12.02	Identify the EMS role within the public health field.
12.03	Discuss basic concepts of epidemiology.
12.04	Discuss ways of EMS involvement in injury prevention.
12.05	Identify areas of need for prevention programs in the community.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency. –The student will be able to:
13.01	Explain the “rights” of medication administration and describe how each one related to EMS.
13.02	Discuss and differentiate the various medication forms and the appropriate routes of administration
13.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
13.04	Discuss the components and elements of a drug profile including: <ul style="list-style-type: none"> <li>13.04.01 class</li> <li>13.04.02 actions</li> <li>13.04.03 contraindications</li> <li>13.04.04 side effects</li> <li>13.04.05 dose</li> <li>13.04.06 route</li> </ul>
13.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
14.0	<b>Emergency Medications:</b> Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT. – The student will be able to:
14.01	State the following for each medication that can be administered by an EMT as dictated by the State of Florida and local medical direction : <ul style="list-style-type: none"> <li>14.01.01 class</li> <li>14.01.02 generic and trade names</li> <li>14.01.03 actions</li> <li>14.01.04 indication</li> <li>14.01.05 contraindications</li> <li>14.01.06 complications</li> <li>14.01.07 routes of administration</li> <li>14.01.08 side effects</li> <li>14.01.09 interactions</li> <li>14.01.10 Doses of medications</li> </ul>
14.02	Discuss the forms in which the medications may be found.

14.03	Demonstrate the steps in properly inspecting each type of medication.
14.04	Discuss the difference between administration versus assistance of patient medications.
15.0	<b>Airway Management:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of airway management across the life span within the scope of practice of the EMT. – The student will be able to:
15.01	Review the structures and functions of the respiratory system.
15.02	Describe appropriate airway management for a patient with or without adequate breathing.
15.03	Describe indications for and demonstrate the steps in performing the head-tilt chin-lift and jaw thrust in all age groups.
15.04	Define, identify and describe the following:
15.04.01	tracheostomy
15.04.02	laryngectomy
15.04.03	stoma
15.04.04	tracheostomy tube
15.05	Describe the special considerations in airway management for the pediatric patient.
15.06	Demonstrate the techniques of suctioning.
15.07	Demonstrate relief of FBAO.
15.08	Demonstrate how to insert an oral and nasal -airway adjunct.
15.09	Demonstrate how to insert both esophageal and supra-glottic airways.
16.0	<b>Respirations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of respiration. – The student will be able to:
16.01	Review the pulmonary ventilation process to include mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.).
16.02	Describe the oxygenation process.
16.03	Explain both external and internal respiration process.
16.04	Discuss the various pathophysiologies of the respiratory system.
16.05	Describe assessment and management for adequate and inadequate respiration, including the use of pulse oximetry and capnography.
16.06	Describe the following regarding supplemental oxygen delivery devices:
16.06.01	indications
16.06.02	contraindications
16.06.03	advantages
16.06.04	disadvantages
16.06.05	complications

16.06.06	liter flow range
16.06.07	concentration of delivered oxygen
16.06.08	procedures
16.06.09	purpose
16.06.10	components
16.07	Review the anatomy and physiology of the respiratory system including:
16.07.01	control of respirations
16.07.02	mechanics of respiration
16.07.03	pulmonary ventilation
16.07.04	oxygenation
16.07.05	mechanical ventilation
16.08	Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
16.09	Demonstrate the correct operation of oxygen tanks and regulators.
16.10	Demonstrate the use of high, medium, low, and variable concentration oxygen delivery devices for all age groups.
16.11	Discuss the use of an oxygen humidifier and the requirements needed for its use.
16.12	Discuss the differences between negative pressure and positive pressure ventilation.
17.0	<b>Artificial Ventilations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span. – The student will be able to:
17.01	Demonstrate how to ventilate a patient with a pocket mask.
17.02	Demonstrate the safe and effective ventilation for a patient with a BVM for one or two rescuers using oral-nasal adjuncts with appropriate airway positioning.
17.03	Discuss the signs of adequate and inadequate ventilation using the BVM.
17.04	Describe the steps involved in performing a comprehensive assessment of ventilations.
17.05	Demonstrate how to ventilate a patient with a stoma.
17.06	Demonstrate the use of various devices used in the assessment of supra-glottic airway placement.
17.07	Describe the following for a patient with an automatic transport ventilator (ATV):
17.07.01	indications
17.07.02	contraindications
17.07.03	advantages
17.07.04	disadvantages
17.07.05	complications
17.07.06	technique for ventilating
17.08	Describe the following for a patient with a CPAP:



	17.08.01	indications
	17.08.02	contraindications
	17.08.03	advantages
	17.08.04	disadvantages
	17.08.05	complications
	17.08.06	technique for ventilating
18.0	<b>Scene Size-Up:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations. – The student will be able to:	
	18.01	Recognize and describe hazards/potential hazards at the scene.
	18.02	Discuss common mechanisms of injury/nature of illness.
	18.03	Discuss the priority considerations for multiple-patient situations.
	18.04	Explain why it is important for the EMT to anticipate and determine the need for additional or specialized resources.
	18.05	Discuss the importance of continuous scene assessment to ensure safety of the EMS team and the patient.
	18.06	Discuss the minimum standard precautions that should be followed and PPE that should be worn as appropriate.
	18.07	Discuss special considerations for dealing with a violent scene.
	18.08	Explain the rationale for crew members to evaluate scene safety prior to entering.
	18.09	Explain how patient situations affect your evaluation of mechanism of injury or illness.
19.0	<b>Primary Assessment:</b> Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations. – The student will be able to:	
	19.01	Summarize the elements of a general impression of the patient.
	19.02	Explain the reason for performing a primary assessment.
	19.03	Discuss and demonstrate methods of assessing level of responsiveness using AVPU.
	19.04	Discuss and demonstrate methods of assessing the airway and providing airway care across the life span.
	19.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
	19.06	Differentiate between a patient with adequate and inadequate breathing.
	19.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
	19.08	Discuss and demonstrate assessing the patient for external bleeding.
	19.09	Describe and demonstrate the assessment and interpretation of skin color, temperature, moisture and capillary refill across the life

	span.
	19.10 Explain the reasons prioritizing a patient for care and transport.
	19.11 Describe when it is appropriate to expose the patient completely.
	19.12 Differentiate between critical life-threatening, potentially life- threatening, and non-life-threatening patient presentations.
20.0	<b>History-Taking:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking. – The student will be able to:
	20.01 Determine and investigate the chief complaint.
	20.02 Describe components of the patient history.
	20.03 Explain the importance of obtaining a SAMPLE and OPQRST history.
	20.04 Acknowledge the feelings patients experience during assessment.
	20.05 Discuss the value of obtaining a family and social history.
	20.06 Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
21.0	<b>Secondary Assessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment. – The student will be able to:
	21.01 Discuss the components and techniques of the physical exam and skills involved.
	21.02 Discuss the indications for performing: 21.02.01 rapid assessment 21.02.02 focused exam 21.02.03 head to toe exam
	21.03 Demonstrate: 21.03.01 rapid exam 21.03.02 focused exam 21.03.03 head to toe exam
	21.04 Describe and demonstrate the techniques of inspection, palpation, percussion, and auscultation.
	21.05 Describe and demonstrate the importance of obtaining a baseline set of vital signs.
	21.06 Discuss blood pressure ranges across the life span.
22.0	<b>Monitoring Devices:</b> Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT. – The student will be able to:
	22.01 Describe and demonstrate the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies.

	22.01.01	pulse oximetry
	22.01.02	glucometry
	22.01.03	capnography
	22.01.04	noninvasive BP monitoring
	22.01.05	thermometry
	22.01.06	telemetry
	22.02	Demonstrate proper placement of a cardiac monitor and diagnostic ECG leads.
23.0	<b>Reassessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations. – The student will be able to:	
	23.01	Describe the components of reassessment and demonstrate the skills involved.
	23.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
	23.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
	23.04	Demonstrate the reassessment of patients across the life span.
24.0	<b>Medical Overview:</b> Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints. – The student will be able to:	
	24.01	Identify factors that complicate patient assessment:
	24.01.01	scene safety
	24.01.02	environmental factors
	24.01.03	chief complaint
	24.01.04	EMT preconceptions
	24.01.05	distracting injuries
	24.01.06	tunnel vision
	24.01.07	patient cooperation
	24.01.08	EMT attitude
	24.02	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
25.0	<b>Neurology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span. – The student will be able to:	
	25.01	Review the anatomy and physiology of the nervous system.
	25.02	Describe the pathophysiology of the following neurologic disorders:
	25.02.01	altered mental status
	25.02.02	stroke
	25.02.03	transient ischemic attack
	25.02.04	headache
	25.02.05	seizures
	25.02.06	syncope

25.03	Discuss and identify the causes, signs and symptoms of ischemic strokes, hemorrhagic strokes, and transient ischemic attacks and their similarities and differences.
25.04	Discuss and demonstrate how to use a stroke scoring system in the assessment of patients with suspected stroke.
25.05	Define and differentiate generalize seizure, partial seizure and status epilepticus and list their possible causes.
25.06	Define and differentiate migraine headache, sinus headache, tension headache and discuss how to distinguish harmless headaches from something more serious.
25.07	Define “altered mental status” and identify the possible causes.
25.08	Describe and demonstrate the assessment and management of the patient with various neurological emergencies in all age groups to include:
25.08.01	strokes
25.08.02	headaches
25.08.03	seizures
25.08.04	altered mental status
25.09	Discuss the transport of the stroke patient to the appropriate treatment center.
26.0	<b>Abdominal and Gastrointestinal Disorder:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
26.01	Review the basic anatomy and physiology the gastrointestinal, genital and urinary systems.
26.02	Define and describe the pathophysiology of the following abdominal and gastrointestinal disorders:
26.02.01	abdominal pain
26.02.02	acute abdomen
26.02.03	peritonitis
26.02.04	appendicitis
26.02.05	pancreatitis
26.02.06	cholecystitis
26.02.07	gastrointestinal bleeding
26.02.08	esophageal varices
26.02.09	gastroenteritis
26.02.10	ulcers
26.02.11	intestinal obstruction
26.02.12	hernia
26.02.13	abdominal aortic aneurysm
26.03	Identify the signs and symptoms of common GI disorders.
26.04	Describe and demonstrate the assessment and management of the patient with various gastrointestinal emergencies.
26.05	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.

27.0	<b>Immunology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span. – The student will be able to:
27.01	Define and differentiate allergic reaction and anaphylaxis.
27.02	Describe the pathophysiology of the following immunology disorders: 27.02.01 allergic reaction 27.02.02 anaphylaxis 27.02.03 anaphylactic shock
27.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an allergic or anaphylactic reaction.
27.04	Review the following for the epinephrine auto-injector: 27.04.01 generic and trade names 27.04.02 medication forms 27.04.03 dose 27.04.04 administration 27.04.05 action 27.04.06 contraindications
27.05	Demonstrate the use of epinephrine auto-injector.
27.06	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
27.07	Describe the incidence, morbidity and mortality of anaphylaxis.
27.08	Recognize the signs and symptoms related to anaphylaxis.
27.09	Describe the risk factors for and prevention of anaphylaxis and appropriate patient education.
27.10	Discuss common antigens most frequently associated with anaphylaxis.
27.11	Explain the importance of separating the patient from the allergen when possible.
28.0	<b>Infectious Disease:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span. – The student will be able to:
28.01	Discuss the causes of infectious diseases
28.02	Describe the pathophysiology of infectious diseases of significant public health concern.
28.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an infectious disease.
28.04	Discuss mandatory notification to state or federal agencies of various diseases.
28.05	Identify patients with risk factors for infectious disease.
28.06	Explain the principles and practices of infection control in prehospital care.

28.07	Describe and discuss the rationale for the various types of PPE.
28.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).
28.09	Discuss decontamination of the ambulance and disinfection of patient care equipment, and areas in which care of the patient occurred.
28.10	Describe the actions to take if the EMS provider is exposed to an infectious disease.
28.11	Demonstrate the ability to comply with body substance isolation guidelines.
28.12	Discuss the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS)
29.0	<b>Endocrine Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span. – The student will be able to:
29.01	Review the anatomy and physiology of the endocrine system and its main function in the body.
29.02	Describe the pathophysiology and signs and symptoms of the following endocrine disorders:
29.02.01	insulin dependent Diabetes Mellitus
29.02.02	non-insulin dependent Diabetes Mellitus
29.02.03	hypoglycemia
29.02.04	hyperglycemia
29.02.05	Diabetic Ketoacidosis(DKA)
29.02.06	Hyperglycemic Hyperosmolar Non-ketotic Syndrome (HHNS)
29.03	Define and differentiate between Type I and Type II Diabetes.
29.04	Identify and demonstrate the steps in the management of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
29.05	Review the following for oral glucose:
29.05.01	generic and trade names
29.05.02	medication forms
29.05.03	dose
29.05.04	administration
29.05.05	action
29.05.06	contraindications
29.06	Demonstrate the steps of using a glucometer device and administering oral glucose.
29.07	Describe and demonstrate the assessment and the management of the patient experiencing an endocrinologic emergency to include hypo- and hyper-glycemia.
29.08	Discuss the general assessment findings associated with endocrinologic emergencies.
30.0	<b>Psychiatric:</b> Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span. – The student will be able to:

30.01	Differentiate among behavior, psychiatric disorders and behavioral emergencies
30.02	Discuss common psychiatric disorders and behavioral emergencies.
30.03	Discuss the general factors that may cause an alteration in a patient's behavior.
30.04	Discuss the risk factors/signs or symptoms of various psychiatric emergencies to include suicide.
30.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
30.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
30.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
30.08	Describe the special considerations for the safety of the EMS provider and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
30.09	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency.
30.10	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.0	<b>Cardiovascular:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span. – The student will be able to:
31.01	Review the basic anatomy and physiology of the cardiovascular system.
31.02	Describe the pathophysiology and signs and symptoms of the following cardiovascular disorders:
31.02.01	acute coronary syndrome
31.02.02	angina pectoris
31.02.03	thromboembolism
31.02.04	myocardial infarction
31.02.05	hypertensive emergencies
31.02.06	aortic aneurysm/dissection
31.02.07	left and right sided heart failure
31.02.08	cardiogenic shock
31.02.09	cardiac arrest
31.03	Describe and demonstrate the assessment and management of the patient experiencing a cardiac emergency.
31.04	Discuss the indications and contraindications for automated external defibrillation (AED).
31.05	Explain the impact of age and weight on defibrillation.
31.06	Discuss the position of comfort for patients with various cardiac emergencies.
31.07	Explain the rationale for early defibrillation.

31.08	Discuss and differentiate among various types of external defibrillators.
31.09	Discuss and differentiate among the various types of implanted cardiac devices.
31.10	Understand the importance of maintenance and operators check list for AED's.
31.11	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.
31.12	Explain the role medical direction plays in the use of automated external defibrillation.
31.13	Explain the rationale for administering nitroglycerin and ASA to a patient with chest pain or discomfort.
31.14	Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
31.15	Demonstrate the assessment and documentation of patient response to nitroglycerin.
31.16	Discuss the purpose and use of CPR assist devices.
32.0	<b>Toxicology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span. – The student will be able to:
32.01	Define and differentiate among toxicology, poisoning, and overdose.
32.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
32.02.01	food poisoning
32.02.02	carbon monoxide poisoning
32.02.03	cyanide poisoning
32.02.04	exposure to acid or alkaline substances
32.02.05	exposure to hydrocarbons
32.02.06	methanol ingestion
32.02.07	isopropanol ingestion
32.02.08	ethylene glycol ingestion
32.02.09	exposure to poisonous plants
32.02.10	drug withdrawal
32.02.11	alcoholic syndrome
32.02.12	withdrawal syndrome (including delirium tremens)
32.02.13	illicit drug use
32.02.14	medication overdose
32.02.15	opioid overdose
32.02.16	organa phosphate overdose
32.03	Discuss various ways that toxins enter the body.
32.04	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
32.05	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.



32.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
32.07	Review the following for Narcan (naloxone):
32.07.01	generic and trade names
32.07.02	medication forms
32.07.03	dose
32.07.04	administration
32.07.05	action
32.07.06	contraindications
33.0	<b>Respiratory:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span – The student will be able to:
33.01	Review the basic anatomy and physiology of the respiratory system.
33.02	Describe the pathophysiology and signs and symptoms of the following respiratory disorders:
33.02.01	Chronic Obstructive Pulmonary Disease
33.02.02	Asthma
33.02.03	Pulmonary Edema
33.02.04	Spontaneous Pneumothorax
33.02.05	Hyperventilation Syndrome
33.02.06	Cystic Fibrosis
33.02.07	Pulmonary Embolism
33.02.08	Pneumonia
33.02.09	Viral Respiratory Infections
33.02.10	Poisonous Exposures
33.02.11	Bacterial respiratory infections
33.03	Discuss signs of adequate air exchange.
33.04	Discuss the signs and symptoms of a patient across the continuum from respiratory distress to failure.
33.05	Describe and demonstrate the assessment and management of the patient with a respiratory emergency.
33.06	Review the following for the metered-dose inhalers and small volume nebulizers for medications within the scope of practice of the EMT:
33.06.01	generic name
33.06.02	medication forms
33.06.03	dose
33.06.04	administration
33.06.05	action
33.06.06	indications
33.06.07	contraindications
33.07	Describe and demonstrate the steps in facilitating the use of an inhaler and a small volume nebulizer.

33.08	Differentiate between upper and lower airway obstruction.
33.09	Demonstrate assessment and interpretation of normal and abnormal lung and breath sounds.
34.0	<b>Hematology:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span. –The student will be able to:
34.01	Review the compositions and functions of blood and plasma.
34.02	Describe the pathophysiology of the following hematology disorders:
34.02.01	Anemia
34.02.02	Sickle Cell Anemia / Sickle Cell Crisis
34.02.03	Hemophilia
34.03	Describe and demonstrate the assessment and the management of the patient with a hematological disorder.
35.0	<b>Genitourinary /Renal:</b> Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergency across the life span. – The student will be able to:
35.01.01	Review the basic anatomy and physiology of the genitourinary and renal systems.
35.02	Describe the pathophysiology and signs and symptoms of the following genitourinary/ renal disorders:
35.02.01	urinary tract infection
35.02.02	kidney stones
35.02.03	kidney failure
35.03	Discuss the basic principles of kidney dialysis.
35.04	Discuss the recognition and complications of urinary catheters.
35.05	Describe and demonstrate the assessment and management of the patient with a dialysis emergency.
36.0	<b>Gynecology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span. – The student will be able to:
36.01	Review the basic anatomy and physiology of the female reproductive system.
36.02	Describe the pathophysiology and signs and symptoms of the following gynecologic disorders and emergencies, including but not limited to:
36.02.01	sexual assault
36.02.02	non-traumatic vaginal bleeding
36.02.03	menstrual pain
36.02.04	ovarian cyst
36.02.05	endometritis
36.02.06	endometriosis
36.02.07	pelvic inflammatory disease
36.02.08	Sexually Transmitted Disease
36.03	Describe and demonstrate the assessment and management of the patient experiencing a gynecologic emergency.

36.04	Describe the assessment and management of a patient who has experienced a sexual assault including the psychosocial impact and assessment findings/presentations.
36.05	Discuss the professional and psychological importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
36.06	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
37.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
37.01	Review the basic anatomy and physiology of the musculoskeletal system.
37.02	Describe and demonstrate the assessment and management of the patient in all age groups with a non-traumatic musculoskeletal emergency.
38.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span –The student will be able to:
38.01	Describe and demonstrate the assessment and management of the patient in all age groups with abnormal conditions affecting the eyes, ears, nose and throat, including epistaxis.
39.0	<b>Shock and Resuscitation:</b> Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span. – The student will be able to:
39.01	Discuss and identify causes and pathophysiology of the categories of hemorrhage and shock.
39.02	Review causes and pathophysiology of respiratory failure and arrest.
39.03	Review causes and pathophysiology of cardiac failure or arrest.
39.04	Discuss the various types and degrees of shock.
39.05	Discuss post resuscitation management.
39.06	Explain the system components of CPR, the links in the AHA chain of survival and how each relates to patient survival.
39.07	Define and differentiate between compensated and decompensated shock.
39.08	Discuss the importance of teamwork in the successful management of the critical patient.
39.09	Demonstrate how to perform one and two rescuer CPR, adult, child, and infant.
39.10	Demonstrate how to perform rescuer level appropriate defibrillation in an adult, child, and infant patient.
39.11	Demonstrate rapid decision making based on differential field diagnosis of the critical patient with a peri-arrest condition.
39.12	Describe and demonstrate the assessment and management of the patient with hemorrhage and shock.
40.0	<b>Trauma Overview:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span. – The student will be able to:

40.01	Discuss pathophysiology of the trauma patient.
40.02	Discuss the components of a comprehensive trauma systems and levels of trauma centers.
40.03	Describe the considerations for different transportation modes to a trauma center.
40.04	Discuss the kinematics of blunt and penetrating trauma.
40.05	Discuss and describe significant and non-significant Mechanism of Injury (MOI) and provide examples of each.
40.06	Demonstrate the application of the State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code (F.A.C.).
40.07	Discuss the National Trauma Triage Protocol of injured Patients.
40.08	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
40.09	Identify the need for rapid intervention transport of the trauma patient.
41.0	<b>Bleeding:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span. – The student will be able to:
41.01	Review the anatomy and physiology of the circulatory system.
41.02	Discuss the different types of bleeding and classes of hemorrhage.
41.03	Review signs and symptoms of shock (hypo-perfusion).
41.04	Demonstrate effective hemorrhage control to include application of a tourniquet.
41.05	Review the pathophysiology of hemorrhagic shock.
41.06	Recognize the need for rapid transport for patients that are bleeding and showing signs of shock (hypo-perfusion).
41.07	Describe and demonstrate the assessment and management of a patient with hemorrhagic shock.
41.08	Discuss the possible complications of an improperly applied dressing, bandage, tourniquet, and hemostatic agents.
42.0	<b>Chest Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of chest trauma across the life span. –.The student will be able to:
42.01	Review the anatomy and physiology of the thoracic/chest cavity and respiratory system.
42.02	Differentiate between a pneumothorax (open, simple and tension) and hemothorax.
42.03	Discuss the pathophysiology, signs and symptoms, and MOI of myocardial injuries, including the following:
42.03.01	pericardial tamponade
42.03.02	myocardial contusion
42.03.03	myocardial rupture

	42.03.04	commotio cordis
	42.03.05	aortic sheerer
42.04	Discuss the pathophysiology, signs and symptoms, and MOI of specific chest wall injuries, including the following:	
	42.04.01	rib fracture
	42.04.02	flail segment
	42.04.03	sternal fracture
42.05	Describe and demonstrate the assessment and management of chest trauma.	
43.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of abdominal and genitourinary trauma across the life span. – The student will be able to:	
43.01	Review the anatomy and physiology of the abdominal cavity and genitourinary system.	
43.02	Discuss the pathophysiology, signs and symptoms, and MOI for abdominal trauma including hollow and solid injuries.	
43.03	Describe and demonstrate the assessment and management of a patient with a suspected abdominal or genitourinary injury/trauma.	
44.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:	
44.01	Review the anatomy and physiology of the musculo-skeletal system.	
44.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.	
44.03	Discuss the different types of orthopedic trauma including fracture classifications.	
44.04	Explain the rationale for stabilization of an injured extremity.	
44.05	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma.	
44.06	Discuss the following management techniques:	
	44.06.01	heat therapy
	44.06.02	cold therapy
	44.06.03	splinting
44.07	List the six “P’s” of orthopedic injury assessment.	
44.08	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.	
44.09	Review age-associated changes in the bones.	
44.10	Discuss the proper procedures to package an amputated body part for replantation.	
44.11	Explain the rationale for splinting at the scene versus load and go.	
44.12	Demonstrate the proper use of various splinting materials and devices to include improvised and traction splints.	

45.0	<b>Soft Tissue Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
45.01	Review anatomy and physiology of the integumentary system to include the layers of the skin.
45.02	Describe the pathophysiology, signs and symptoms, and MOI of soft tissue trauma.
45.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
45.04	Identify types of burn injuries, including:
45.04.01	thermal burn
45.04.02	chemical burn
45.04.03	electrical burn
45.04.04	radiation exposure
45.05	Describe the depth classifications of burn injuries, including:
45.05.01	superficial burn
45.05.02	partial-thickness burn
45.05.03	full-thickness burn
45.05.04	other depth classifications
45.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines,” the “rule of palms,” and other methods.
45.07	Explain how the seriousness of a burn is related to its depth and percent of body surface area (BSA) involved.
45.08	Review the various management techniques for hemorrhage control.
45.09	Differentiate among the types of injuries requiring the use of an occlusive versus non- occlusive dressing.
45.10	Demonstrate the assessment and management of specific burn injuries including:
45.10.01	thermal
45.10.02	inhalation
45.10.03	chemical
45.10.04	electrical
45.10.05	radiation
46.0	<b>Head, Facial, Neck, and Spine Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck and spine trauma across the life span. – The student will be able to:
46.01	Review the anatomy and physiology of the head, face, neck and spine.
46.02	Describe the pathophysiology, signs and symptoms, and MOI for head, face, neck, and spine trauma.

46.03	Describe and demonstrate the assessment and management of a patient with the following traumas to the head, face, neck, and spine:
46.03.01	penetrating neck trauma
46.03.02	laryngotracheal injury
46.03.03	skull fracture
46.03.04	facial fracture
46.03.05	eye injury (foreign body)
46.03.06	dental trauma
46.04	Recognize and manage life threats due to face, head, neck, and spine trauma.
46.05	Discuss and demonstrate the utilization of the Glasgow Coma Scale.
47.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span. – The student will be able to:
47.01	Review the anatomy and physiology of the nervous system.
47.02	Discuss the pathophysiology, signs and symptoms, and MOI for brain and spinal cord trauma.
47.03	Describe and demonstrate the assessment and management of a patient with a brain and/or spinal cord trauma.
47.04	Discuss the rationale and potential complications of spinal motion restriction of the entire spine when a cervical spine injury is suspected.
47.05	Given a scenario, discuss whether or not to remove a helmet prior to transport of a patient.
47.06	Demonstrate various methods for stabilization and removal of a helmet.
47.07	Discuss documentation of assessment before, during, and after spinal motion restriction.
48.0	<b>Special Considerations in Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of trauma patients with special considerations across the life span. – The student will be able to:
48.01	Review the anatomy and physiology for the following trauma patients:
48.01.01	pregnant
48.01.02	pediatric
48.01.03	geriatric
48.02	Discuss the pathophysiology, signs and symptoms, and MOI of trauma in the following patients:
48.02.01	pregnant
48.02.02	pediatric
48.02.03	geriatric
48.03	Discuss and demonstrate unique assessment and management considerations for the following trauma patients:
48.03.01	pregnant
48.03.02	pediatric

	48.03.03	geriatric
	48.03.04	cognitively impaired
49.0	<b>Environmental Emergencies:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of environmental emergencies across the life span. – The student will be able to:	
49.01	Define drowning and discuss its incidence, risk factors and prevention.	
49.02	Discuss the pathophysiology, signs and symptoms, and MOI of the following:	
	49.02.01	drowning and water related incidents
	49.02.02	temperature-related illness
	49.02.03	bites and envenomation
	49.02.04	dysbarism such as high-altitude injuries
	49.02.05	diving injuries
	49.02.06	lightning (electrical) injury
	49.02.07	high altitude illness
	49.02.08	radiation exposure
49.03	Describes and demonstrate the assessment and management for a patient with the following:	
	49.03.01	drowning and water related incidents
	49.03.02	temperature-related illness
	49.03.03	bites and envenomation
	49.03.04	dysbarism such as high-altitude injuries
	49.03.05	diving injuries
	49.03.06	lightning (electrical) injury
	49.03.07	high altitude illness
	49.03.08	radiation exposure
49.04	Discuss the fundamental principles of the gas laws including: Boyle's, Dalton, Henry and Charles.	
49.05	Discuss scene management and provider safety considerations for a variety of environmental emergencies.	
49.06	Explain the five ways a body can lose heat.	
49.07	Discuss potentially life threatening venomous species of insects, spiders and snakes in the U.S.	
50.0	<b>Multi-Systems Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span. – The student will be able to:	
50.01	Discuss the pathophysiology, signs and symptoms, and MOI of multi-system trauma and blast injuries.	
50.02	Describe and demonstrate assessment and management considerations for a patient of multi system trauma and blast injuries.	
51.0	<b>Obstetrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT. – The student will be able to:	
51.01	Identify and describe the anatomical and the physiological changes during pregnancy.	



51.02	Define the stages of labor and discuss how to assess them.
51.03	Differentiate between cephalic and abnormal delivery.
51.04	Describe the management of a patient with pre-delivery emergencies.
51.05	Discuss and demonstrate the patient care measures for all stages of labor in a cephalic delivery for the mother and the newborn.
51.06	Describe the management of the mother post-delivery.
51.07	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
51.08	Describe the procedures for handling complications of delivery.
51.09	Describe special considerations when meconium is present in amniotic fluid or during delivery.
51.10	Identify the factors that lead to premature birth and low birth weight newborns.
51.11	Demonstrate the procedures for handling complications of pregnancy including pre-eclampsia, eclampsia, and high risk.
52.0	<b>Neonatal Care:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT. – The student will be able to:
52.01	Discuss and demonstrate assessment and management considerations of a neonate.
52.02	Define the term neonate.
52.03	Describe special patient care considerations of a premature baby.
52.04	Calculate the Apgar score given various newborn situations.
52.05	Discuss the common signs when ventilatory assistance is appropriate for a neonate.
52.06	Discuss and demonstrate the steps in resuscitation of a neonate.
52.07	Review the signs of hypovolemia in a newborn.
52.08	Discuss the effects maternal narcotic usage has on the newborn.
52.09	Discuss the management/treatment plan for vomiting in the neonate.
52.10	Discuss the assessment findings associated with common birth injuries in the neonate.
53.0	<b>Pediatrics:</b> Demonstrate a fundamental depth, fundamental breath of knowledge of management of the pediatric patient within the scope of practice of the EMT. – The student will be able to:
53.01	Review the anatomy, physiology and pathophysiology differences of patients.

53.02	Discuss the differences in approaching and assessing patients.
53.03	Discuss and demonstrate assessment and management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
53.04	Describe the selection of appropriate airway adjuncts and ventilation devices.
53.05	Discuss complications of improper utilization of airway adjuncts and ventilation devices.
53.06	Describe the common causes, assessment and management of respiratory distress, failure, or arrest.
53.07	Discuss the common causes, assessment and management of hypo-perfusion.
53.08	Discuss the common causes, assessment and management of cardiopulmonary arrest.
53.09	Describe the common causes, assessment and management of altered level of consciousness.
53.10	Describe the common causes, assessment and management of trauma.
53.11	Describe the common causes, assessment and management of neurological emergencies.
53.12	Demonstrate proper technique for administering blow-by oxygen.
53.13	Review proper technique for suctioning.
53.14	Review appropriate use of airway adjuncts and ventilation devices.
53.15	Review age appropriate basic airway clearing maneuvers for a completely obstructed airway.
54.0	<b>Geriatrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT. – The student will be able to:
54.01	Define and discuss the term geriatrics.
54.02	Review the anatomy, physiology and pathophysiology of the geriatric patient.
54.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
54.04	Discuss the importance of fall prevention with the geriatric patient.
54.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
54.06	Describe the common causes, assessment, and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.0	<b>Patients with Special Challenges:</b> Demonstrate a simple depth, simple breadth of knowledge of the management of the patient with special challenges across the life span. –The student will be able to:
55.01	Discuss the special considerations required when providing emergency care to patients with:
55.01.01	abuse/neglect of vulnerable populations

55.01.02	homelessness
55.01.03	poverty
55.01.04	bariatrics
55.01.05	tech dependent
55.01.06	hospice/terminally ill
55.01.07	tracheostomy
55.01.08	home care
55.01.09	sensory deficit/loss
55.01.10	developmental disability
55.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
55.02.01	respiratory devices
55.02.02	cardiac devices
55.02.03	gastro-urinary devices
55.02.04	central & peripheral IV catheters
55.03	Describe home care and the types of patients it serves and the services it encompasses.
55.04	Differentiate between hospice/palliative care and curative care.
55.05	Discuss the role of the EMT as a patient advocate for vulnerable populations.
56.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
56.01	Discuss the importance of performing regular vehicle and equipment inspection.
56.02	Demonstrate how to perform a daily inspection of an ambulance.
56.03	Review the general provisions of Florida laws relating to the operation of the ambulance.
56.04	Discuss the guidelines for operating an ambulance safely during emergency and non-emergency situation/incident.
56.05	Review considerations that are required for ensuring scene safety, including personal safety, patient safety, and traffic control.
56.06	Review how to clean and disinfect the ambulance and equipment.
57.0	<b>Incident Management:</b> Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
57.01	Discuss the importance of NIMS (National Incidence Management System) and its functional components.
57.02	Discuss unified command and when it is applicable.
57.03	Describe the role of command and the procedures for transfer of command.

57.04	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents:
57.04.01	safety
57.04.02	logistics
57.04.03	rehabilitation
57.04.04	staging,
57.04.05	treatment
57.04.06	triage
57.04.07	transportation
57.04.08	extrication/rescue
57.04.09	morgue
57.04.10	communications
57.05	Discuss the physical and psychological signs of critical incident stress.
58.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
58.01	Review essential elements of scene size-up when arriving at a potential MCI.
58.02	Describe the role of the rescuers and EMS systems in planning for MCIs and disasters.
58.03	Describe the role of the physician at multiple casualty incidents.
58.04	Define triage and describe the principles of triage.
58.05	Describe the START (simple triage and rapid treatment) and JUMP START method of initial triage.
58.06	Describe techniques used to allocate patients to hospitals and track them.
58.07	Discuss and describe the essential equipment to provide logistical support to MCI operations.
58.08	Describe the role of critical incident stress management during and after MCIs.
58.09	Demonstrate the use of local/regional triage tagging system.
59.0	<b>Air Medical:</b> Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response. –The student will be able to:
59.01	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
59.02	Describe the capabilities, protocols, and methods for accessing air medical transport.
59.03	Review the advantages and disadvantages of air medical transport.
59.04	Review the conditions/situations in which air medical transport should be considered.
60.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. –

The student will be able to:	
60.01	Describe the role of the EMT in patient rescue and vehicle extrication
60.02	Describe personal and patient safety during vehicle extrication.
60.03	Explain the difference between simple access and complex access in vehicle extrication.
60.04	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
60.05	Discuss the use of simple hand tools used for vehicle extrication.
60.06	Discuss and describe the hazards and safe practices associated with the following vehicle components:
60.06.01	energy absorbing bumpers
60.06.02	air bag/supplemental restraint systems
60.06.03	catalytic converters and conventional fuel systems
60.06.04	stored energy
60.06.05	hybrid-electric vehicles
60.07	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles.
60.08	Describe the electrical hazards commonly found at highway incidents (above and below ground).
60.09	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
60.10	Explain typical door anatomy and methods to gain access to the patient.
61.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
61.01	Identify and describe resources for substance identification, decontamination, and treatment information, including but not limited to the following:
61.01.01	poison control center
61.01.02	medical control
61.01.03	material safety data sheets (MSDS),
61.01.04	reference textbooks
61.01.05	computer databases
61.01.06	Computer-Aided Management of Emergency Operations (CAMEO)
61.01.07	CHEMTREC
61.01.08	technical specialists
61.01.09	Agency for toxic substances and disease registry
61.02	Explain primary and secondary contamination risk.
61.03	Review routes of exposure.

61.04	Discuss how the substance and route of contamination alters triage and decontamination methods.
61.05	Explain the common signs, symptoms, and treatment for the following substances: 61.05.01      corrosives 61.05.02      pesticides 61.05.03      chemical asphyxiants 61.05.04      hydrocarbon solvents
61.06	Identify local facilities and resources capable of treating patients exposed to hazardous materials.
61.07	Determine the appropriate level of PPE by considering the following: 61.07.01      types 61.07.02      application 61.07.03      use and limitations 61.07.04      use of chemical compatibility chart
61.08	Explain specific decontamination procedures.
61.09	Discuss the designated HAZMAT control zones (HOT, WARM, and COLD).
61.10	Discuss an emergency two-step decontamination process.
61.11	Identify DOT Labels, placards and markings that are used to designate HAZMAT materials.
61.12	Demonstrate the ability to use a variety of reference materials to identify a HAZMAT material.
62.0	<b>Mass Casualty Incidents Due to Terrorism and Disaster:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
62.01	Describe the role of the EMT on the scene of a natural or man-made disaster.
62.02	Define the different types of terrorism and provide examples of incidents of each.
62.03	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.
62.04	Discuss the National Terrorism Advisory System.
62.05	Discuss factors to consider when responding to a terrorist situation.
62.06	Review important actions to take at the scene of a terrorist event such as: 62.06.01      scene safety 62.06.02      personal protection 62.06.03      notification procedures 62.06.04      available resources 62.06.05      working with in the command system
62.07	List and describe the main categories of weapons of mass destruction.

62.08 Discuss the different types of chemical agents and their signs and symptoms.

62.09 Review the treatment and management of patients exposed to various types of chemical agents and radiation.

62.10 Review the different types of radiations and their effect on the human body.

62.11 Discuss the use of a nerve agent antidote kit.

**Florida Department of Education  
Student Performance Standards**

**Program Title:**        **Emergency Medical Technician –ATD**  
**ATD CIP Number:**   **0351090408**  
**SOC Code(s):**        **29-2041**

When this program is offered at the college level, the following standards and benchmarks apply:

**This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:**

01.0	<b>EMS Systems:</b> Demonstration of a simple depth and foundational breadth of EMS systems. – The student will be able to:
01.01	Define Emergency Medical Services (EMS) systems.
01.02	Discuss the historical background of the development of the EMS system.
01.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT and PM) as well as the three levels in the State of Florida.
01.04	Discuss the specific statutes and regulations regarding the EMS system in Florida.
01.05	Discuss vehicle and equipment readiness
01.06	Characterize the EMS system’s role in prevention and public education.
01.07	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
01.08	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.
01.09	Discuss the maintenance of certification and licensure for the EMT in the State of Florida and NREMT.
01.10	Define quality improvement and discuss the EMT’s role in the process.
01.11	Identify the basics of common methods of payment for healthcare services.
01.12	Analyze attributes and attitudes of an effective leader.
01.13	Demonstrate effective techniques for managing team conflict.
01.14	Describe factors that influence the current delivery system of healthcare.
01.15	Discuss the importance of continuing medical education and skills retention.



01.16	Assess personal attitudes and demeanor that may distract from professionalism.
01.17	Serve as a role model and exhibit professional behaviors in the following areas:
01.17.01	integrity
01.17.02	empathy
01.17.03	self-motivation
01.17.04	appearance and personal hygiene
01.17.05	self-confidence
01.17.06	communications ( including phone, email and social media etiquette)
01.17.07	time management
01.17.08	teamwork and diplomacy
01.17.09	respect
01.17.10	patient advocacy (inclusive of those with special needs, alternate life styles and cultural diversity)
01.17.11	careful delivery of service
02.0	<b>Research:</b> Demonstration of a simple depth, simple breadth of research and evidence-based decision making. – The student will be able to:
02.01	Discuss EMS research and evidence based decision making
02.01.01	Conduct scientific literature searches
02.01.02	Read, interpret and extract information from journal articles relevant to a project
02.02	Explain the importance to assess and treat patients based on evidence based decision making.
02.03	Interpret graphs, charts and tables.
02.04	Measure time, temperature, distance, capacity, and mass/weight.
02.05	Convert and use traditional and metric units.
02.06	Make estimations, approximations and judge the reasonableness of the result.
02.07	Convert time from a 12 hour format to a 24 hour format
02.08	Demonstrate ability to evaluate and draw conclusions.
02.09	Calculate ratios.
02.10	Explain the rationale for the ems system gathering data.
03.0	<b>Workforce Safety and Wellness:</b> Demonstration of a fundamental depth, foundational breadth of workforce safety and wellness. – The student will be able to:
03.01	Explain the need to determine scene safety.
03.02	Discuss the importance of body substance isolation (BSI).

03.03	Describe the steps the EMT should take for personal protection from airborne and blood borne pathogens as well as communicable disease.
03.04	List the personal protective equipment necessary to protect oneself in common emergency situations.
03.05	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
03.06	State the steps the EMT should take when approaching a family confronted with death and dying.
03.07	Recognize the warning signs of personal stress and discuss the strategies EMTs can apply to manage it.
03.08	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
03.09	Discuss the guidelines and safety precautions that need to be followed when lifting a patient.
03.10	Describe the guidelines and safety precautions for carrying patients and/or equipment.
03.11	State the guidelines for reaching and their application.
03.12	State the guidelines for pushing and pulling.
03.13	Discuss patient positioning in common emergency situations.
03.14	Discuss situation that may require the use of medical restraints on the patient and explain guidelines and safety consideration for their use.
03.15	Define “infectious disease” and “communicable disease.”
03.16	Describe the routes of transmission for infectious disease.
03.17	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis and HIV.
03.18	Explain how immunity to infectious diseases is acquired.
03.19	Explain post exposure management of exposure to patient blood or body fluids, including completing a post exposure report.
03.20	Describe the components of physical fitness and mental wellbeing.
03.21	Identify personal health practices and environmental factors which affect function of each of the major body systems.
03.22	Develop an awareness of complementary and alternative health practices.
03.23	Explain the basic concepts of positive self-image, wellness and stress.
03.24	Develop a wellness and stress control plan that can be used in personal and professional life.
03.25	Explore the importance of adequate nutrition (i.e. U.S. Department of Agriculture’s MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> )).

03.26	Identify personal health practices and environmental factors which affect function of each of the major body systems.
03.27	Demonstrate the safe use of medical equipment.
03.28	Explain the theory of root- cause analysis.
03.29	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
03.30	Identify and practice security procedures for medical supplies and equipment in the various healthcare settings.
03.31	Describe fire, safety, disaster and evacuation procedures in the various healthcare settings.
03.32	Discuss applicable accrediting and regulatory agency patient safety guidelines.
04.0	<b>Documentation:</b> Demonstration of a fundamental depth, foundational breadth of the principles of medical documentation and report writing. – The student will be able to:
04.01	Recognize applications of technology in healthcare.
04.02	Demonstrate basic computer skills.
04.03	Interpret and utilize information from electronic health records.
04.04	Identify methods of communication to access and distribute data such as fax, e-mail and internet.
04.05	Describe the use and importance of written communication and patient care documentation.
04.06	Explain the legal implication of the patient care report.
04.07	Identify the minimum dataset reference patient information and administrative information on the patient care report.
04.08	Understand how to document refusal of care, including legal implications.
04.09	Discuss the implications of the Health Insurance Portability and Accountability Act of 1996 on confidential documentation.
04.10	Describe the special considerations concerning mass casualty incident documentation.
04.11	Explain the relevance and importance of properly completed documentation.
04.12	Demonstrate completion of a patient care report for a medical and trauma patient.
04.13	Explain the rationale for patient care documentation.
05.0	<b>EMS System Communication:</b> Demonstration of a simple depth, simple breadth of the EMS communication system, communication with other health care professionals, and team communication. – The student will be able to:
05.01	Understand the basic principles of the various types of communications equipment used in EMS

05.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.
05.03	Explain the rationale for providing efficient and effective radio communications and patient reports.
05.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
05.05	Perform an organized and concise radio transmission.
05.06	Perform an organized, concise patient report that would be given to the staff at a receiving facility.
05.07	Perform a brief, organized report that would be given to an ALS provider arriving at an incident scene at which the EMT was already providing care.
06.0	<b>Therapeutic Communication:</b> Demonstration of a simple depth and simple breadth of the principles of therapeutic communication. – The student will be able to:
06.01	Describe principles of therapeutic and effective communication with patients in a manner that achieves a positive relationship.
06.02	Develop basic speaking and active listening skills.
06.03	Recognize the importance of patient/client educations regarding healthcare.
06.04	Demonstrate the adjustment of communication strategies to effectively communicate with patients with:
06.04.01	differing age groups
06.04.02	differing developmental stages
06.04.03	special needs
06.04.04	Differing cultures, including language barriers.
06.05	Demonstrate the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
06.06	Demonstrate the strategies for interviewing persons in special situations.
06.07	Distinguish between and respond to verbal and non-verbal cues.
06.08	Analyze elements of communication using a sender-receiver/close loop model.
06.09	Exhibit positive non-verbal behaviors.
06.10	Establish proper patient rapport.
07.0	<b>Medical/Legal and Ethics:</b> Demonstration of a fundamental depth, foundational breadth of medical legality and ethics. – The student will be able to:
07.01	Differentiate between expressed, implied and involuntary consent
07.02	Discuss the methods of obtaining consent and procedures for minors.
07.03	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.

07.04	Discuss the implications for the EMT in patient refusal of care and/or transport.
07.05	Explain the importance, necessity and legality of patient confidentiality.
07.06	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
07.07	Discuss State of Florida and Federal special reporting situations including:
07.07.01	Abuse
07.07.02	sexual assault
07.07.03	gunshot and knife wounds
07.07.04	communicable disease
07.08	Differentiate between civil tort and criminal actions
07.09	List the elements of negligence and defenses/protections from liability.
07.10	Discuss the role of the EMT at crime scenes and preservation of evidence.
07.11	Define ethics and morality and discuss their implication for the EMT.
07.12	Differentiate between licensure and certification as they apply to EMS.
07.13	Discuss Florida legislation such as the Baker Act, Marchman Act, and the Emergency Examination and Treatment of Incapacitated Persons Act.
07.14	Differentiate between the scope of practice and the standard of care as applied to the EMT.
07.15	Discuss the legal concept of immunity, including Good Samaritan statutes and governmental immunity.
07.16	Describe the appropriate patient management and care techniques in a refusal of care situation.
07.17	Analyze the relationship between the law, morals and ethics in EMS and the premise that should under lie the EMTs ethical decisions.
07.18	Describe the criteria necessary to honor an advance directive.
07.19	Explain the rationale for the needs, benefits and varying degrees of advance directives.
08.0	<b>Anatomy and Physiology:</b> Demonstrate the application of fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. – The student will be able to:
08.01	Label the following topographic terms:
08.01.01	Medial
08.01.02	lateral
08.01.03	proximal
08.01.04	distal
08.01.05	superior
08.01.06	inferior

08.01.07	anterior
08.01.08	posterior
08.01.09	midline
08.01.10	right and left
08.01.11	mid-clavicular
08.01.12	bilateral
08.01.13	mid-axillary
08.02	Chart the life support chain, aerobic metabolism and anaerobic metabolism.
08.03	Define anatomy, physiology, pathophysiology and homeostasis.
08.04	Identify and describe the anatomical structures and functions of the following:
08.04.01	Skeletal system
08.04.02	Muscular system
08.04.03	Respiratory System
08.04.04	Circulatory/ Cardiovascular system
08.04.05	Nervous System
08.04.06	Integumentary system
08.04.07	Digestive system
08.04.08	Endocrine system including glands and hormones
08.04.09	Renal system
08.04.10	Reproductive system
08.04.11	Lymphatic System
08.05	Explain cellular anatomy and physiology.
08.06	Explain cellular respiration.
08.07	Discuss cell division.
08.08	Describe the different types of muscle tissues including skeletal, smooth and cardiac.
08.09	Describe the functions and divisions of the skeletal system including the classifications of bones.
08.10	Name and identify the location of the bones of the axial and appendicular skeleton.
08.11	Describe the classification and types of joints.
08.12	Describe the function of muscles.
08.13	Identify major muscles of the body
08.14	Describe the general function of the respiratory system and its structures.
08.15	Discuss the mechanisms of breathing including:

08.15.01	Mechanical Ventilation
08.15.02	Pulmonary volumes
08.15.03	Dead space
08.15.04	Lung compliance
08.16	Explain the diffusion of gases in external and internal respiration.
08.17	Describe oxygen and carbon dioxide transport in the blood.
08.18	Describe nervous and chemical mechanisms that regulate Respirations.
08.19	Discuss respiration and acid-base balance.
08.20	Describe the composition and function of blood and plasma.
08.21	Identify and describe the anatomical structures and functions of the cardiovascular system.
08.22	Discuss the hemodynamics of blood pressure.
08.23	Discuss the role of nutrition, metabolism and body temperature on body function.
08.24	Describe the causes, advantages and disadvantages of a fever
08.25	Discuss the hypothalamus functions as the thermostat in the body
09.0	<b>Medical Terminology:</b> Demonstrate the application of fundamental knowledge in the use of medical terminology and medical terms. – The student will be able to:
09.01	Identify medical terminology word parts such as:
09.01.01	root words
09.01.02	prefixes
09.01.03	suffixes
09.01.04	combining forms
09.02	Correctly utilize medical terminology describing each of the following:
09.02.01	body structures
09.02.02	functions,
09.02.03	conditions and disorders
09.02.04	body regions
09.02.05	cavities
09.02.06	areas
09.02.07	landmarks
09.03	Correctly use medical abbreviations and symbols.
09.04	Read and understand basic medical documentation in medical records and medical reports.

09.05	Communicate with healthcare professionals utilizing basic medical terminology.
09.06	Explain the rationale for using accepted medical terminology correctly.
10.0	<b>Pathophysiology:</b> Demonstrate the application of a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation. – The student will be able to:
10.01	Discuss signs of irreversible death.
10.02	Review the anatomy and physiology of the respiratory and cardiovascular systems.
10.03	Discuss and identify the pathophysiology and medical care for respiratory failure as well as respiratory and cardiac arrest.
10.04	Explain the system components of CPR, the four links in the AHA chain of survival and how each one relates to maximizing the survival of the patient.
10.05	Show Provider (AHA guidelines) certification required prior to EMT program admission as per FS 401.27.
10.06	Understand shock, including the pathophysiology, causes, and its signs and symptoms associated with the various types of shock.
10.07	Discuss patient assessment and steps to the emergency care of the patient with signs and symptoms of shock.
10.08	Based on age variations, discuss and distinguish the variations and causes between the management of patient experiencing shock.
11.0	<b>Life Span Development:</b> Demonstrate the application of fundamental knowledge of life span development to patient assessment and management. – The student will be able to:
11.01	Describe the major physiologic and psychosocial characteristics of:
11.01.01	An infant's life
11.01.02	A toddler and preschooler's life
11.01.03	A school age child's life
11.01.04	An adolescent's life
11.01.05	An early adults life
11.01.06	A middle adult's life
11.01.07	A late adult's life
12.0	<b>Public Health:</b> Demonstrate the use of simple knowledge of the principles of illness and injury prevention in emergency care. – The student will be able to:
12.01	Define public health and explain the goal of the public health field.
12.02	Identify the EMS role within the public health field.
12.03	Recognize the three categories of public health laws.
12.04	Discuss basic concepts of epidemiology
12.05	Discuss ways of EMS involvement in injury prevention.



12.06	Identify areas of need for prevention programs in the community.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a simple depth, simple breadth for medication safety and kinds of medications used during an emergency. – The student will be able to:
13.01	Explain the “six rights” of medication administration and describe how each one related to EMS.
13.02	Discuss the forms in which the medications may be found and provide examples of each and discuss how the form of a medication dictates its route of administration.
13.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
13.04	Discuss the components and elements of a drug profile including:
13.04.01	Actions
13.04.02	Contraindications
13.04.03	Side effects
13.04.04	Dose
13.04.05	Route
13.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
14.0	<b>Medication Administration:</b> Demonstrate a fundamental depth and foundational breadth of medication administration within the scope of practice of the EMT. – The student will be able to:
14.01	Discuss the difference between administration versus assistance of patient medications.
14.02	Explain the rationale for the administration of medications.
14.02.01	Assist in the administration of medications by the following routes:
14.02.02	oral
14.02.03	sublingual
14.02.04	inhalation
14.02.05	auto- injector
15.0	<b>Emergency Medications:</b> Demonstrate a fundamental depth and simple breadth of emergency medications within the scope of practice of the EMT. – The student will be able to:
15.01	State the following for each medication that can be administered by an EMT as dictated by the State of Florida and local medical direction :
15.01.01	Generic and trade names
15.01.02	Actions
15.01.03	Indication
15.01.04	Contraindications
15.01.05	Complications
15.01.06	Routes of administration
15.01.07	Side effects
15.01.08	Interactions
15.01.09	Doses of medications

15.02	Discuss the forms in which the medications may be found.
15.03	Demonstrate the steps in properly inspecting each type of medication.
16.0	<b>Airway Management:</b> Demonstrate a foundational depth, foundational breadth of airway management within the scope of practice of the EMT. – The student will be able to:
16.01	Review the structures and functions of the respiratory system.
16.02	State what care should be provided for a patient with or without adequate breathing.
16.03	Describe and demonstrate the steps in performing the head-tilt chin-lift and jaw thrust in all age groups.
16.04	Relate mechanism of injury to opening the airway.
16.05	Explain the differences between airway anatomies in all age groups.
16.06	Describe the following for a patient with an automatic transport ventilator (ATV):
16.06.01	Indications
16.06.02	Contraindications
16.06.03	Advantages
16.06.04	Disadvantages
16.06.05	Complications
16.06.06	Technique for ventilating
16.07	Describe the following regarding supplemental oxygen delivery devices:
16.07.01	Indications
16.07.02	Contraindications
16.07.03	Advantages
16.07.04	Disadvantages
16.07.05	Complications
16.07.06	Liter Flow Range
16.07.07	Concentration of Delivered Oxygen
16.08	Define, identify and describe the following:
16.08.01	tracheostomy
16.08.02	laryngectomy
16.08.03	stoma
16.08.04	tracheostomy tube
16.09	Describe the special considerations in airway management and ventilation for the pediatric patient.
16.10	Demonstrate the techniques of suctioning in all age groups.
16.11	Demonstrate relief of FBAO in all age groups.
16.12	Demonstrate how to insert an oral and nasal -airway adjunct in all age groups.

16.13	Demonstrate how to insert both esophageal and supra-glottic airways in all age groups.
<b>17.0</b>	<b>Respirations:</b> Demonstrate a fundamental depth, foundational breadth of respiration. – The student will be able to:
17.01	Review the pulmonary ventilation process to include mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.)
17.02	Describe the oxygenation process
17.03	Explain both external and internal respiration process
17.04	Discuss the various pathophysiologies of the respiratory system.
17.05	Describe assessment and management for adequate and inadequate respiration, including the use of pulse oximetry and capnography.
17.06	State the following for oxygen delivery devices:
17.06.01	components
17.06.02	purpose
17.06.03	indications
17.06.04	contraindications
17.06.05	complications
17.06.06	procedures
17.07	Describe and demonstrate the steps in performing the skill of assisting ventilations in the conscious and unconscious patient in respiratory distress using a bag-valve-mask (BVM), and continuous positive airway pressure (CPAP).
17.08	Review the anatomy and physiology of the respiratory system including:
17.08.01	control of respirations
17.08.02	mechanics of respiration
17.08.03	pulmonary ventilation
17.08.04	oxygenation
17.08.05	mechanical ventilation
17.09	Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
17.10	Demonstrate the correct operation of oxygen tanks and regulators.
17.11	Demonstrate the use of high, medium, low and variable concentration oxygen delivery devices for all age groups.
17.12	Demonstrate the use of an oxygen humidifier and the requirements needed for its use.
17.13	Discuss the differences between negative pressure and positive pressure ventilation.
<b>18.0</b>	<b>Artificial Ventilations:</b> Demonstrate a fundamental depth, foundational breadth of assessment and management utilizing artificial ventilation. – The student will be able to:
18.01	Demonstrate how to artificially ventilate a patient with a pocket mask.

18.02	Demonstrate the steps in performing the skill of artificially ventilating a patient with a BVM for one and two rescuers using oral-nasal airway adjuncts, head tilt chin lift and jaw thrust.
18.03	Demonstrate the signs of adequate and inadequate artificial ventilation using the BVM.
18.04	Describe and demonstrate the steps in artificially ventilating a patient with a manually triggered ventilation device.
18.05	Demonstrate how to artificially ventilate the pediatric, adult and geriatric patient.
18.06	Describe the steps involved in performing a comprehensive assessment of ventilations in all age groups.
18.07	Demonstrate how to artificially ventilate a patient with a stoma.
18.08	Demonstrate how to artificially ventilate a patient for all age groups.
18.09	Demonstrate the use of various devices used in the assessment of supra-glottic and esophageal airway placement.
19.0	<b>Scene Size-Up:</b> Demonstrate a fundamental depth, foundational breadth of scene management and multiple patient situations. –The student will be able to:
19.01	Recognize and describe hazards/potential hazards at the scene.
19.02	Discuss common mechanisms of injury/nature of illness.
19.03	Discuss the procedures for multiple-patient situations.
19.04	Explain why it is important for the EMT to determine the need for additional or specialized resources.
19.05	Discuss the importance of continuous scene assessment to ensure safety of the EMS team and the patient.
19.06	List the minimum standard precautions that should be followed and PPE that should be worn at the emergency scene.
19.07	Determine special considerations for dealing with a violent scene.
19.08	Explain the rationale for crew members to evaluate scene safety prior to entering.
19.09	Explain how patient situations affect your evaluation of mechanism of injury or illness.
20.0	<b>Primary Assessment:</b> Demonstrate a fundamental depth, simple breadth of the primary assessment for all patient situations. – The student will be able to:
20.01	Summarize the elements of a general impression of the patient.
20.02	Explain the reason for performing a primary assessment.
20.03	Discuss and demonstrate methods of assessing altered mental status using assess for level of consciousness (AVPU).
20.04	Discuss and demonstrate methods of assessing the airway and providing airway care.

20.05	Describe and demonstrate methods used for assessing if a patient is breathing
20.06	Differentiate between a patient with adequate and inadequate breathing.
20.07	Distinguish between methods of assessing breathing for all age groups.
20.08	Describe and demonstrate the methods used to obtain a pulse in all age groups
20.09	Compare the methods of providing airway care in all age groups.
20.10	Discuss and demonstrate the need for assessing the patient for external bleeding.
20.11	Describe and demonstrate normal and abnormal findings when assessing skin color, temperature, moisture and capillary refill for all age groups.
20.12	Explain the reason for and demonstrate prioritizing a patient for care and transport.
20.13	Describe when it is appropriate to expose the patient completely
20.14	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
21.0	<b>History-Taking:</b> Demonstrate a fundamental depth, foundational breadth of the components of history taking. – The student will be able to:
21.01	Determine the chief complaint.
21.02	Investigate the chief complaint.
21.03	Describe components of the patient history
21.04	Explain the importance of obtaining a SAMPLE and OPQRST history.
21.05	Recognize and respond to the feelings patients experience during assessment.
21.06	Discuss the value of obtaining a family and social history.
21.07	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
22.0	<b>Secondary Assessment:</b> Demonstrate a fundamental depth, foundational breadth of techniques used for a secondary assessment. – The student will be able to:
22.01	Describe the unique needs and demonstrate assessing an individual with a specific chief complaint with no known prior history.
22.02	Discuss the components and techniques of the physical exam and skills involved.
22.03	Differentiate between the history and physical exam that are performed for responsive patients with no known prior history, responsive patients with a known prior history and unresponsive patients.
22.04	State the circumstances for performing a rapid assessment.

22.05	Discuss the reason for performing a focused history and physical exam.
22.06	Describe and demonstrate the techniques of inspection, palpation, percussion, and auscultation.
22.07	Describe and demonstrate the importance of obtaining a baseline set of vital signs.
22.08	List normal blood pressure ranges for all age groups.
22.09	Describe and demonstrate the head to toe examination.
22.10	Demonstrate special examination techniques of the cardiovascular examination.
22.11	Demonstrate the examination of the nervous system
22.12	Demonstrate a physical exam performed for a responsive patient with and without a known prior history.
22.13	Demonstrate a physical exam performed for an unresponsive patient.
22.14	Recognize and respond to the feelings patients experience during assessment.
23.0	<b>Monitoring Devices:</b> Demonstrate a simple depth, simple breath of monitoring devices within the scope of practice of the EMT. – The student will be able to:
23.01	Explain and demonstrate the use and interpretation of pulse oximetry and capnography device readings.
23.02	Demonstrate and understand the findings of a blood pressure measured by palpation, auscultation and electronic device.
23.03	Describe and demonstrate the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies.
23.03.01	Pulse Oximetry
23.03.02	Glucometry
23.03.03	Capnography
23.04	Demonstrate the application of a cardiac monitor.
24.0	<b>Reassessment:</b> Demonstrate a fundamental depth, foundational breadth of how and when to perform a reassessment for all patient situations. – The student will be able to:
24.01	Describe the components of the reassessment and demonstrate the skills involved.
24.02	Discuss the reasons for repeating the initial assessment as part of the reassessment.
24.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
24.04	Demonstrate the steps for performing the reassessment of patients in all age groups.
24.05	Explain the rationale of recording additional sets of vital signs.

25.0	<b>Medical Overview:</b> Demonstrate a simple depth, foundation breadth of pathophysiology, assessment and management of medical complaints. – The student will be able to:
25.01	Identify the assessment factors for a patient with a medical complaint including:
25.01.01	scene safety
25.01.02	environmental factors
25.01.03	chief complaint
25.01.04	non-life threatening conditions
25.01.05	distracting injuries
25.01.06	tunnel vision
25.01.07	patient cooperation
25.01.08	rescuer attitude
25.02	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
26.0	<b>Neurology:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of neurologic disorders/emergencies for all age groups. – The student will be able to:
26.01	Review the anatomy and physiology of the nervous system.
26.02	Describe the pathophysiology of the following neurologic disorders:
26.02.01	Altered Mental Status
26.02.02	Stroke
26.02.03	Transient Ischemic Attack
26.02.04	Headache
26.02.05	Seizures
26.02.06	Syncope
26.03	Discuss and identify the causes, signs and symptoms of ischemic strokes, hemorrhagic strokes and transient ischemic attacks and their similarities and differences.
26.04	Discuss and demonstrate how to use a stroke scoring system in the assessment of patients with suspected stroke.
26.05	Define and differentiate generalize seizure, partial seizure and status epilepticus and list their possible causes.
26.06	Define and differentiate migraine headache, sinus headache, tension headache and discuss how to distinguish a harmless headaches from something more serious.
26.07	Define “altered mental status” and identify the possible causes
26.08	Describe and demonstrate the assessment and management of the patient with various neurological emergencies in all age groups to include:

	26.08.01	strokes
	26.08.02	headaches
	26.08.03	seizures
	26.08.04	altered mental status
	26.09	Discuss the transport of the stroke patient to the appropriate treatment center.
27.0	<b>Abdominal and Gastrointestinal Disorder:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of abdominal and gastrointestinal disorders/emergencies for all age groups. – The student will be able to:	
	27.01	Review the basic anatomy and physiology the gastrointestinal, genital and urinary systems.
	27.02	Describe the pathophysiology of the following abdominal and gastrointestinal disorders:
	27.02.01	Abdominal Pain
	27.02.02	Acute Abdomen
	27.02.03	Peritonitis
	27.02.04	Appendicitis
	27.02.05	Pancreatitis
	27.02.06	Cholecystitis
	27.02.07	Gastrointestinal bleeding
	27.02.08	Esophageal Varices
	27.02.09	Gastroenteritis
	27.02.10	Ulcers
	27.02.11	Intestinal Obstruction
	27.02.12	Hernia
	27.02.13	Abdominal Aortic Aneurysm
	27.03	Define the term, "acute abdomen."
	27.04	Identify the signs and symptoms, and common causes of an acute abdomen.
	27.05	Define upper and lower gastrointestinal bleeding.
	27.06	Describe and demonstrate the assessment and management of the patient in all age groups with various gastrointestinal emergencies to include upper and lower gastrointestinal bleeding.
	27.07	Recognize the signs and symptoms related to upper and lower gastrointestinal bleeding.
	27.08	Define acute gastroenteritis.
	27.09	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.
	27.10	Discuss the signs and symptoms of peritoneal inflammation relative to acute abdominal pain.
28.0	<b>Immunology:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of immunology disorders/emergencies for all age groups. – The student will be able to:	
	28.01	Define and differentiate allergic reaction and anaphylaxis



28.02	Describe the pathophysiology of the following immunology disorders: 28.02.01 Allergic Reaction 28.02.02 Anaphylaxis 28.02.03 Anaphylactic Shock
28.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an allergic or anaphylactic reaction.
28.04	State the following for the epinephrine auto-injector: 28.04.01 generic and trade names 28.04.02 medication forms 28.04.03 dose 28.04.04 administration 28.04.05 action 28.04.06 contraindications
28.05	Demonstrate the use of epinephrine auto-injector
28.06	Review the anatomy and physiology of the organs and structures related to anaphylaxis
28.07	Describe the incidence, morbidity and mortality of anaphylaxis.
28.08	Identify the risk factors most predisposing to anaphylaxis.
28.09	Recognize the signs and symptoms related to anaphylaxis
28.10	Describe the prevention of anaphylaxis and appropriate patient education.
28.11	List common antigens most frequently associated with anaphylaxis.
28.12	Demonstrate how to remove a stinger from a bee sting and proper management following its removal.
29.0	<b>Infectious Disease:</b> Demonstrate a simple depth, simple breadth of the assessment and management of a patient who may have an infectious disease for all age groups. – The student will be able to:
29.01	List the causes of infectious diseases
29.02	Describe the pathophysiology of the following infectious diseases: 29.02.01 Hepatitis B 29.02.02 Hepatitis C 29.02.03 Tuberculosis 29.02.04 Human Immunodeficiency Virus (AIDS) 29.02.05 Severe Acute Respiratory Syndrome 29.02.06 West Nile Virus 29.02.07 Multidrug-Resistant Organisms
29.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an infectious disease.

29.04	Discuss mandatory notification to State or Federal agencies of various diseases.
29.05	Identify patients with risk factors for infectious disease.
29.06	Explain the principles and practices of infection control in prehospital care.
29.07	Describe and discuss the rationale for the various types of PPE.
29.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).
29.09	Discuss decontamination of the ambulance and disinfection of patient care equipment, and areas in which care of the patient occurred.
29.10	Describe the actions to take if the EMS provider is exposed to an infectious disease.
29.11	Demonstrate the ability to comply with body substance isolation guidelines.
30.0	<b>Endocrine Disorders:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of endocrine disorders/emergencies for all age groups. –The student will be able to:
30.01	Review the anatomy and physiology of the endocrine system and its main function in the body.
30.02	Describe the pathophysiology of the following endocrine disorders:
30.02.01	Insulin Dependent Diabetes Mellitus
30.02.02	Non-Insulin Dependent Diabetes Mellitus
30.02.03	Hypoglycemia
30.02.04	Hyperglycemia
30.02.05	Diabetic Ketoacidosis(DKA)
30.02.06	Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNS)
30.03	Define and differentiate diabetes (type I and II), Hypoglycemia, Hyperglycemia, insulin shock and diabetic ketoacidosis.
30.04	Identify and demonstrate the steps in the management of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
30.05	State the following for oral glucose:
30.05.01	Generic and trade names
30.05.02	Medication forms
30.05.03	Dose
30.05.04	Administration
30.05.05	Action
30.05.06	Contraindications
30.06	Demonstrate the steps of using a glucometer device and administering oral glucose.
30.07	Describe and demonstrate the assessment and the management of the patient in all age groups experiencing an endocrinologic emergency to include hypo- and hyper-glycemia.
30.08	Discuss the general assessment findings associated with endocrinologic emergencies.

30.09	Differentiate between the pathophysiology of normal glucose metabolism and diabetic glucose metabolism.
30.10	Recognize the signs and symptoms of the patient with hypoglycemia.
30.11	Recognize the signs and symptoms of the patient with hyperglycemia.
30.12	Discuss the pathophysiology of diabetic ketoacidosis.
30.13	Recognize the signs and symptoms of the patient with diabetic ketoacidosis.
31.0	<b>Psychiatric:</b> Demonstrate a fundamental depth, foundational breadth regarding the assessment and management of psychiatric emergencies for all age groups. – The student will be able to:
31.01	Define behavior, psychiatric disorders and behavioral emergencies.
31.02	Describe the pathophysiology of the following psychiatric disorders:
31.02.01	Anxiety
31.02.02	Phobias
31.02.03	Depression
31.02.04	Paranoia
31.02.05	Psychosis
31.02.06	Schizophrenia
31.02.07	Suicidal Ideations
31.02.08	Agitated Delirium
31.02.09	Violence toward Others
31.03	Discuss the general factors that may cause an alteration in a patient's behavior.
31.04	Discuss the risk factors/signs or symptoms of various psychiatric emergencies to include suicide.
31.05	Given an scenario, apply knowledge of the special medical/legal considerations for managing behavioral emergencies to include Florida statutes:
31.05.01	Baker Act (FS 394.451)
31.05.02	Marchman Act (FS 397.601 and FS 397.675)
31.05.03	Emergency examination and treatment of incapacitated (FS401.445)
31.06	Describe and demonstrate the assessment and management of the patient in all age groups experiencing a behavioral or psychiatric emergency.
31.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
31.08	Describe the special considerations for the safety of the EMS provider and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric disorders.
31.09	Describe methods of restraint that may be necessary in managing the emotionally disturbed patient and the possible legal implications.
31.10	Explain the rationale for learning how to modify your behavior toward the patient with a behavioral emergency.

32.0	<b>Cardiovascular:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of cardiovascular emergencies for all age groups. – The student will be able to:
32.01	Review the basic anatomy and physiology of the cardiovascular system.
32.02	Describe the pathophysiology of the following cardiovascular disorders:
32.02.01	Acute Coronary Syndrome
32.02.02	Angina pectoris
32.02.03	Thromboembolism
32.02.04	Myocardial infarction
32.02.05	Hypertensive emergencies
32.02.06	Aortic aneurysm/dissection
32.02.07	Left and right sided Heart Failure
32.02.08	Cardiogenic Shock
32.02.09	Hypertensive Emergencies
32.02.10	Cardiac Arrest
32.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing a cardiac emergency.
32.04	List the indications and contraindications for automated external defibrillation (AED).
32.05	Explain the impact of age and weight on defibrillation.
32.06	Discuss the position of comfort for patients with various cardiac emergencies.
32.07	Explain the rationale for early defibrillation.
32.08	Discuss the various types of automated external defibrillators.
32.09	Differentiate between the fully automated and the semi-automated defibrillator.
32.10	Understand the importance of maintenance and operators check list for AED's.
32.11	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.
32.12	Explain the role medical direction plays in the use of automated external defibrillation.
32.13	Explain the rationale for administering nitroglycerin and ASA to a patient with chest pain or discomfort.
32.14	Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
32.15	Demonstrate the assessment and documentation of patient response to nitroglycerin.
33.0	<b>Toxicology:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of toxicological (poisoning and overdose) emergencies for all age groups. – The student will be able to:
33.01	Define and differentiate toxicology, poisoning and overdose.

33.02	Describe the pathophysiology of the following toxicological emergencies:
33.02.01	Food Poisoning
33.02.02	Carbon Monoxide Poisoning
33.02.03	Cyanide Poisoning
33.02.04	Exposure to Acid or Alkaline Substances
33.02.05	Exposure to Hydrocarbons
33.02.06	Methanol Ingestion
33.02.07	Isopropanol Ingestion
33.02.08	Ethylene Glycol Ingestion
33.02.09	Exposure to Poisonous Plants
33.02.10	Drug Withdrawal
33.02.11	Alcoholic Syndrome
33.02.12	Withdrawal syndrome (including delirium tremens)
33.02.13	Illicit Drug Use
33.02.14	Medication Overdose
33.03	List various ways that poisons enter the body.
33.04	List signs/symptoms associated with poisoning.
33.05	Discuss and demonstrate the assessment and management for the patient in all age groups with poisoning or overdose.
33.06	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
33.07	Explain the rationale for contacting medical direction early in the prehospital management of the poisoning or overdose patient.
34.0	<b>Respiratory:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of respiratory disorders/emergencies for all age groups. – The student will be able to:
34.01	Review the basic anatomy and physiology of the respiratory system.
34.02	Describe the pathophysiology of the following respiratory disorders:
34.02.01	Chronic Obstructive Pulmonary Disease: Emphysema, Chronic Bronchitis, and Asthma
34.02.02	Pulmonary Edema
34.02.03	Spontaneous Pneumothorax
34.02.04	Hyperventilation Syndrome
34.02.05	Epiglottitis
34.02.06	Pertussis
34.02.07	Cystic Fibrosis
34.02.08	Pulmonary Embolism
34.02.09	Pneumonia
34.02.10	Viral Respiratory Infections
34.02.11	Poisonous Exposures
34.03	List signs of adequate air exchange.

34.04	State the signs and symptoms of a patient with respiratory distress.
34.05	Describe and demonstrate the assessment and management of the patient in all age groups with a respiratory emergency.
34.06	State the following for the metered-dose inhaler: 34.06.01 generic name 34.06.02 medication forms 34.06.03 dose 34.06.04 administration 34.06.05 action 34.06.06 indications 34.06.07 contraindications
34.07	Describe and demonstrate the steps in facilitating the use of an inhaler.
34.08	Differentiate between upper airway obstruction and lower airway disease in the patient for all age groups.
34.09	Discuss the measures needed to ensure personal safety while attending to the patient with a respiratory emergency or infection.
34.10	Demonstrate proper use of airway and ventilation devices.
34.11	Explain the rationale and demonstrate the application of a CPAP/ BiPAP unit.
35.0	<b>Hematology:</b> Demonstrate a simple depth, simple breadth of the assessment, and management of hematology disorders for all age groups. – The student will be able to:
35.01	Review the anatomy and physiology of blood.
35.02	Describe the pathophysiology of the following hematology disorders: 35.02.01 Anemia 35.02.02 Sickle Cell Anemia / Sickle Cell Crisis 35.02.03 Hemophilia
35.03	State the signs and symptoms of a patient with a Sickle Cell crisis or a clotting disorder.
35.04	Describe and demonstrate the assessment and the management of the patient with Sickle cell crisis or a clotting disorder.
35.05	Describe the anatomy and physiology of the hematologic system to the pathophysiology and assessment of patients with hematologic disorders such as Sickle cell.
36.0	<b>Genitourinary /Renal:</b> Demonstrate a simple depth, simple breath of the assessment and management of genitourinary/ renal emergency for all age groups. – The student will be able to:
36.01.01	Review the basic anatomy and physiology of the genitourinary and renal systems
36.02	Describe the pathophysiology of the following genitourinary/ renal disorders: 36.02.01 Urinary Tract Infection 36.02.02 Kidney Stones 36.02.03 Kidney Failure

36.03	Understand the basic principles of kidney dialysis.
36.04	Discuss the signs and symptoms of a patient with a dialysis emergency.
36.05	Describe and demonstrate the assessment and management of the patient with a dialysis emergency.
37.0	<b>Gynecology:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of gynecologic emergencies for all age groups. – The student will be able to:
37.01	Review the basic anatomy and physiology of the female reproductive system.
37.02	Describe the pathophysiology of the following gynecologic disorders and emergencies:
37.02.01	sexual Assault
37.02.02	non-traumatic vaginal bleeding
37.02.03	menstrual pain
37.02.04	ovarian cyst
37.02.05	endometritis
37.02.06	endometriosis
37.02.07	pelvic inflammatory disease
37.02.08	sexually transmitted diseases
37.02.09	Describe and demonstrate the assessment and management of the patient in all age groups experiencing a gynecologic emergency to include:
37.02.10	excessive bleeding
37.02.11	abdominal pain
37.02.12	sexual assault.
37.03	Discuss the special consideration and precautions an EMT must observe when arriving at the scene of a suspected case of sexual assault or rape.
37.04	Describe the assessment and management of a patient who has experienced a sexual assault including the psychosocial impact and assessment findings/presentations.
37.05	Value the importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
37.06	Defend the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
38.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundational breadth of the assessment and management of non-traumatic fractures for all age groups. – The student will be able to:
38.01	Review the basic anatomy and physiology of the musculoskeletal system.
38.02	Describe and demonstrate the assessment and management of the patient in all age groups with a non-traumatic musculoskeletal emergency.
39.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a simple depth, simple breadth in recognition and management of nose bleed for all age groups. – The student will be able to:
39.01	Discuss the recognition and management of an epistaxis.

39.02	Describe and demonstrate the assessment and management of the patient in all age groups with abnormal conditions affecting the eyes, ears, nose and throat.
40.0	<b>Shock and Resuscitation:</b> Demonstrate the application of fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure. – The student will be able to:
40.01	Discuss and identify causes and pathophysiology of the categories of hemorrhage and shock.
40.02	Discuss and identify causes and pathophysiology of respiratory failure and arrest.
40.03	Discuss and identify causes and pathophysiology of cardiac failure or arrest.
40.04	Discuss the various types and degrees of shock.
40.05	Discuss and identify post resuscitation and management.
40.06	Explain the system components of CPR, the links in the AHA chain of survival and how each one relates to maximizing the survival of the patient.
40.07	Show Provider (AHA guidelines) certification required prior to rescuer program completion.
40.08	Discuss and distinguish the variations and causes between the management of the infant, child, adult and geriatric patient experiencing shock.
40.09	Define and differentiate compensated and decompensated hemorrhagic shock.
40.10	Defend the importance of teamwork, experience, and practice in preparation to manage the critical patient
40.11	Demonstrate how to perform one and two rescuer CPR, adult, child, infant
40.12	Demonstrate how to perform rescuer level appropriate defibrillation in an adult, child and infant patient
40.13	Demonstrate the steps of rescuer level appropriate post resuscitative care
40.14	Management and resuscitation of the critical patient
40.15	Demonstrate rapid decision making based on differential field diagnosis of the critical patient with a peri-arrest condition
40.16	Describe and demonstrate the assessment and management of the patient with hemorrhage and shock.
41.0	<b>Trauma Overview:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment and management of the trauma patient for all age groups. – The student will be able to:
41.01	Discuss and define pathophysiology of the trauma patient
41.02	List and describe the components of a comprehensive trauma systems and levels of trauma centers.
41.03	Describe the criteria for different transportation modes to a trauma center.
41.04	Explain the relationship between mechanism of injury and potential energy, kinetic energy and work in relation to trauma.



	41.04.01	Define energy, force, laws of motion
	41.04.02	Explain the physics of trauma
41.05		Define the term blunt and penetrating trauma and provide examples of the mechanism of injury (MOI) that would cause each to occur and include:
	41.05.01	Effects of high, medium and low velocity penetrating trauma
	41.05.02	Primary, secondary, tertiary and miscellaneous blast injuries
	41.05.03	Factors to consider of a patient injured in a fall.
	41.05.04	Consider all age groups
41.06		Describe the kinematics of penetrating injuries.
41.07		Discuss the role of documentation in trauma.
41.08		Demonstrate the use of the Florida Trauma Alert Criteria, classify various types of trauma patients.
41.09		Discuss and describe significant and non-significant Mechanism of Injury (MOI) and provide examples of each.
41.10		Discuss and describe State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code (F.A.C.)
41.11		Discuss the National Trauma Triage Protocol of injured Patients
42.0		<b>Bleeding:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment, and management of bleeding for all age groups. – The student will be able to:
	42.01	Review the anatomy and physiology of the circulatory system
	42.02	Review the different types of bleeding and classes of hemorrhage.
	42.03	List signs and symptoms of shock (hypo-perfusion).
	42.04	Describe the body's physiologic response to bleeding.
	42.05	Review the pathophysiology of hemorrhagic shock.
	42.06	Explain the sense of urgency to transport patients that are bleeding and show signs of shock (hypoperfusion).
	42.07	Describe and demonstrate the assessment and management of a patient in all age groups with hemorrhagic shock.
	42.08	Demonstrate how to apply a commercial tourniquet.
	42.09	Formulate a field impression based upon the assessment findings for a patient with hemorrhagic shock.
43.0		<b>Chest Trauma:</b> Demonstrate a fundamental depth, simple breadth of pathophysiology, assessment and management of chest trauma for all age groups. – The student will be able to:
	43.01	Review the anatomy and physiology of the thoracic/chest cavity and respiratory system.

43.02	Differentiate between a pneumothorax (open, simple and tension) and hemothorax.
43.03	Discuss the pathophysiology and MOI of myocardial injuries, including the following:
43.03.01	pericardial tamponade
43.03.02	myocardial contusion,
43.03.03	myocardial rupture
43.03.04	commotio cordis
43.04	Identify the need for rapid intervention and transport of the patient with thoracic injuries.
43.05	Discuss the pathophysiology and MOI of specific chest wall injuries, including the following:
43.05.01	rib fracture
43.05.02	flail segment
43.05.03	sternal fracture
43.06	Describe and demonstrate the assessment and management of injuries to the chest wall, lung and myocardial tissue.
43.07	Identify the need for rapid intervention and transport of the patient with chest wall, lung and myocardial tissue injuries.
43.08	Formulate a field impression based upon the assessment findings for a patient with chest trauma.
44.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a fundamental depth, simple breadth of pathophysiology, assessment and management of abdominal and genitourinary trauma for all age groups. – The student will be able to:
44.01	Review the anatomy and physiology and of the abdominal cavity and genitourinary (both male and female) system.
44.02	Describe the abdominal quadrants and the organs found within each quadrant.
44.03	Describe the differences between hollow and solid organs.
44.04	Discuss the pathophysiology and MOI for abdominal trauma including hollow and solid injuries.
44.05	Describe and demonstrate the assessment and management of a patient with a suspected abdominal or genitourinary injury including:
44.05.01	Penetrating
44.05.02	Blunt
44.05.03	Open
44.05.04	Closed
44.06	Formulate a field impression based upon the assessment findings for a patient with abdominal trauma.
45.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment, and management of orthopedic trauma for all age groups. – The student will be able to:
45.01	Review the anatomy and physiology of the musculo-skeletal system.
45.02	and Discuss pathophysiology and MOI for orthopedic injury including:
45.02.01	Fractures
45.02.02	Sprains

45.02.03	Strains
45.02.04	Pelvic Injury
45.02.05	Amputation
45.03	Describe the different types of orthopedic injuries including:
45.03.01	Fractures
45.03.02	Sprains
45.03.03	Strains
45.03.04	Pelvic Injury
45.03.05	Amputation
45.04	List the primary signs and symptoms of extremity trauma.
45.05	Explain the rationale for stabilization of an open and a closed painful, swollen, deformed extremity.
45.06	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic injury including:
45.06.01	fractures
45.06.02	sprains
45.06.03	strains
45.06.04	pelvic Injury
45.06.05	amputation
45.07	Explain the benefits and general guidelines for the following management techniques:
45.07.01	heat Therapy
45.07.02	cold Therapy
45.07.03	splinting
45.08	List the six "Ps" of orthopedic injury assessment.
45.09	Discuss the need for assessment of pulses, motor, and sensation before and after splinting.
45.10	Describe age-associated changes in the bones.
45.11	Discuss the usefulness of the pneumatic anti-shock garment (PASG) in the management of fractures.
45.12	Discuss the out-of-hospital management of dislocation/fractures, including splinting and realignment and sprains and strains.
45.13	Discuss the pathophysiology of replantation.
45.14	Explain the rationale for splinting at the scene versus load and go.
45.15	Demonstrate the proper use of following techniques for a patient with a suspected fracture: , ,
45.15.01	hard
45.15.02	improvised
45.15.03	soft
45.15.04	traction splints
45.16	Formulate a field impression based upon the assessment findings for a patient with orthopedic trauma.

46.0	<b>Soft Tissue Trauma:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment, and management of soft tissue trauma for all age groups. – The student will be able to:
46.01	Review anatomy and physiology of the integumentary system to include the layers of the skin.
46.02	Describe the pathophysiology and MOI of wounds, burns, crush injuries and high pressure injection injuries.
46.03	Describe and demonstrate the assessment and management of the following types of closed soft tissue injuries:
46.03.01	wounds
46.03.02	burns
46.03.03	high pressure injection
46.03.04	crush syndrome injuries
46.03.05	compartment syndrome injuries
46.03.06	contusion
46.03.07	hematoma
46.04	Describe and demonstrate the assessment and management of the following types of open soft tissue injuries:
46.04.01	abrasions
46.04.02	lacerations
46.04.03	major arterial lacerations
46.04.04	avulsions,
46.04.05	bites
46.04.06	impaled objects
46.04.07	amputations
46.04.08	incisions
46.04.09	crush injuries
46.04.10	blast injuries
46.04.11	Penetrations/punctures.
46.05	Identify types of burn injuries, including:
46.05.01	thermal burn
46.05.02	inhalation burn
46.05.03	chemical burn
46.05.04	electrical burn
46.05.05	radiation exposure
46.06	Describe the depth classifications of burn injuries, including:
46.06.01	superficial burn
46.06.02	partial-thickness burn
46.06.03	full-thickness burn
46.06.04	Other depth classifications
46.07	Describe methods for determining body surface area percentage of a burn injury including the “rules of nines,” the "rules of palms," and other methods.
46.08	Explain how the seriousness of a burn is related to its depth and extent (percent of body surface area (BSA) involved or rule of nines) for patients in all age groups.

46.09	Differentiate and demonstrate the various management techniques for hemorrhage control of open soft tissue injuries, including but not limited to:
46.09.01	direct pressure
46.09.02	pressure dressing
46.09.03	tourniquet application
46.09.04	Hemostatic agents
46.10	Differentiate between the types of injuries requiring the use of an occlusive versus non- occlusive dressing.
46.11	Discuss the possible complications of an improperly applied dressing, bandage, tourniquet and hemostatic agents.
46.12	Describe and demonstrate the assessment and management of specific burn injuries including:
46.12.01	thermal
46.12.02	inhalation
46.12.03	chemical
46.12.04	electrical
46.12.05	radiation
46.13	Formulate a field impression based upon the assessment findings for a patient with soft tissue trauma.
47.0	<b>Head, Facial, Neck, and Spine Trauma:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment, and management of head, facial, neck, and spine trauma for all age groups. – The student will be able to:
47.01	Review the anatomy and physiology and of the head, face, and neck (non-spinal).
47.02	Describe the pathophysiology and MOI for head, face, and neck (non-spinal) hemorrhage.
47.03	Describe and demonstrate the assessment and management of a patient with the following injuries to the head, face and neck (non-spinal):
47.03.01	penetrating neck trauma
47.03.02	laryngotracheal injury
47.03.03	skull fracture
47.03.04	facial fracture
47.03.05	eye injury ( foreign body)
47.03.06	dental trauma
47.04	Recognize and manage life threats due to head, neck and spine trauma.
47.05	Discuss and demonstrate the rationale and use of the Glasgow Coma Score.
47.06	Formulate a field impression based upon the assessment findings for a patient with head, facial, and/ or neck (non-spinal) trauma.
48.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment, and management of nervous system trauma for all age groups. – The student will be able to:
48.01	Review the anatomy and physiology and of the nervous system.
48.02	Discuss the pathophysiology and MOI for brain and spinal injury including:

48.02.01	Increased intracranial pressure (ICP)
48.02.02	Concussion
48.02.03	Contusion
48.03	Describe and demonstrate the assessment and management of a patient with a brain and spinal injury including:
48.03.01	Brain Trauma
48.03.02	Spinal Cord Trauma
48.03.03	Cervical Spine Trauma
48.04	Explain the rationale for motion restriction of the entire spine when a cervical spine injury is suspected.
48.05	Explain the rationale for utilizing spinal motion restriction methods apart from the straps on the cots.
48.06	Explain the rationale for utilizing a short spine motion restriction device when moving a patient from the sitting to the supine position.
48.07	Given a scenario, defend whether or not to remove a helmet prior to transport of a patient.
48.08	Demonstrate specific management techniques for a patient with a suspected spinal cord injury.
48.09	Demonstrate various methods for stabilization and removal of a helmet.
48.10	Demonstrate documentation of assessment before, during and after spinal motion restriction.
48.11	Formulate a field impression based upon the assessment findings for a patient with brain and/or spinal trauma.
49.0	<b>Special Considerations in Trauma:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment and management of trauma patients with special considerations for all age groups. – The student will be able to:
49.01	Review the anatomy and physiology for the following trauma patients:
49.01.01	pregnant
49.01.02	pediatric
49.01.03	geriatric
49.01.04	cognitively impaired
49.02	Discuss the pathophysiology and MOI of trauma in the following patients:
49.02.01	pregnant
49.02.02	pediatric
49.02.03	geriatric
49.02.04	cognitively impaired
49.03	Discuss and demonstrate unique assessment and management considerations for the following trauma patients:
49.03.01	pregnant
49.03.02	pediatric
49.03.03	geriatric
49.03.04	cognitively impaired
49.04	Formulate a field impression based upon the assessment findings for a patient requiring special considerations.

50.0	<b>Environmental Emergencies:</b> Demonstrate a fundamental depth, foundational breadth of pathophysiology, assessment and management of environmental emergencies for all age groups. – The student will be able to:
50.01	Define drowning and discuss its incidence, risk factors and prevention.
50.02	Discuss the pathophysiology and MOI of the following: 50.02.01 Drowning and water related incidents 50.02.02 temperature-related illness 50.02.03 bites and envenomation 50.02.04 dysbarism such as high-altitude edema 50.02.05 diving injuries 50.02.06 lightning (electrical) injury 50.02.07 high altitude illness
50.03	Describes and demonstrate the assessment and management for a patient with the following: 50.03.01 Drowning and water related incidents 50.03.02 temperature-related illness 50.03.03 bites and envenomation 50.03.04 dysbarism such as high-altitude edema 50.03.05 diving injuries 50.03.06 lightning (electrical) injury 50.03.07 high altitude illness
50.04	Discuss the physics of the gas laws including: Boyle's, Dalton, Henry and Charles.
50.05	Discuss scene management and provider safety considerations for a submersion, diving, or lightning incident.
50.06	Explain the five ways a body can lose heat
50.07	Identify the species of insects, spiders and snakes in the US that may cause life threatening injuries.
50.08	Formulate a field impression based upon the assessment findings for a patient with an environmental emergency.
51.0	<b>Multi-Systems Trauma:</b> Demonstrate a fundamental depth, foundational breadth of the pathophysiology, assessment, and management of multi-system trauma and blast injuries. – The student will be able to:
51.01	Discuss the pathophysiology and MOI of multi-system trauma and blast injuries.
51.02	Discuss the golden principle of out-of-hospital trauma care
51.03	Describe and demonstrate assessment and management considerations for a patient of multi system trauma and blast injuries.
51.04	Formulate a field impression based upon the assessment findings for a patient with multi systems trauma and/ or blast injuries.
52.0	<b>Obstetrics:</b> Demonstrate a fundamental depth, foundational breadth of management of the obstetric patient within the scope of practice of the EMT. – The student will be able to:
52.01	Identify and describe the anatomical structures and functions of the female reproductive system and how these structures and functions change during pregnancy

52.02	Define the stages of labor and discuss how to assess them
52.03	Differentiate between normal delivery, abnormal delivery and complications associated with delivery.
52.04	Differentiate the management of a patient with predelivery emergencies from a normal delivery.
52.05	State the patient care measures for all stages of labor in a normal (cephalic) delivery for the mother and the newborn
52.06	Describe how to care for the newborn post-delivery.
52.07	Describe the management of the mother post-delivery.
52.08	State the patient care measures for all stages of labor in abnormal (non-cephalic) deliveries for the mother and the newborn
52.09	Describe the procedures for handling complications of pregnancy
52.10	Describe special considerations when meconium is present in amniotic fluid or during delivery.
52.11	Describe special patient care considerations of a premature baby.
52.12	Demonstrate how to listen to fetal heart tones.
52.13	Demonstrate the patient care measures for all stages of labor in a normal (cephalic) delivery for the mother and the newborn
52.14	Demonstrate the patient care measures for all stages of labor in abnormal (non-cephalic) deliveries for the mother and the newborn
52.15	Demonstrate the procedures for handling complications of pregnancy including pre-eclampsia and eclampsia
53.0	<b>Neonatal Care:</b> Demonstrate a fundamental depth, foundational breadth of management of the newborn and neonatal patient within the scope of practice of the EMT. – The student will be able to:
53.01	Discuss and demonstrate assessment and management considerations of a neonate.
53.02	Define the term neonate.
53.03	Identify the factors that lead to premature birth and low birth weight newborns.
53.04	Calculate the Apgar score given various newborn situations.
53.05	Discuss the common signs when ventilator assistance is appropriate for a neonate.
53.06	Identify and discuss the use of oxygen/airway adjuncts in the neonate
53.07	Discuss the steps in resuscitation of a neonate
53.08	Discuss the signs of hypovolemia in a newborn.



53.09	Discuss the effects maternal narcotic usage has on the newborn
53.10	Discuss the management/treatment plan for vomiting in the neonate.
53.11	Discuss the assessment findings associated with common birth injuries in the neonate.
53.12	Demonstrate assessment of APGAR scoring during a scenario
53.13	Demonstrate appropriate assessment technique for examining a neonate.
53.14	Demonstrate appropriate assisted ventilations for a neonate.
53.15	Demonstrate appropriate chest compression and ventilation technique for a neonate.
53.16	Demonstrate the initial steps in resuscitation of a neonate.
53.17	Demonstrate blow-by oxygen delivery for a neonate.
54.0	<b>Pediatrics:</b> Demonstrate a fundamental depth, fundamental breath of management of the pediatric patient within the scope of practice of the EMT. – The student will be able to:
54.01	Review the anatomy, physiology and pathophysiology and differences of patients in the pediatric age ranges.
54.02	Discuss the differences in approaching and assessing patients in the pediatric age ranges.
54.03	Discuss and demonstrate assessment and management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
54.04	Describe the selection of appropriate airway adjuncts and ventilation devices for infants and children.
54.05	Discuss complications of improper utilization of airway adjuncts and ventilation devices with infants and children.
54.06	Describe the common causes, assessment and management of respiratory distress, failure, or arrest in infants and children.
54.07	Discuss the common causes, assessment and management of hypo-perfusion in infants and children.
54.08	Discuss the common causes, assessment and management of cardiopulmonary arrest in infants and children.
54.09	Describe the common causes, assessment and management of altered level of consciousness in infants and children.
54.10	Describe the common causes, assessment and management of trauma in infants and children.
54.11	Discuss the pathophysiology of hypo-perfusion in infants and children.
54.12	Describe the common causes, assessment and management of hypo-perfusion in infants and children.
54.13	Describe the common causes, assessment and management of neurological emergencies in infants and children.

54.14	Demonstrate proper technique for administering blow-by oxygen to infants and children.
54.15	Demonstrate proper technique for suctioning of infants and children.
54.16	Demonstrate appropriate use of airway adjuncts and ventilation devices with infants and children.
54.17	Demonstrate age appropriate basic airway clearing maneuvers for infants and children with a completely obstructed airway.
54.18	Demonstrate appropriate airway and breathing control maneuvers for infant and child trauma patients.
55.0	<b>Geriatrics:</b> Demonstrate a fundamental depth, foundational breadth of management of the geriatric patient within the scope of practice of the EMT. – The student will be able to:
55.01	Define and discuss the term “geriatrics.”
55.02	Review the anatomy, physiology and pathophysiology of the Geriatric patient.
55.03	Discuss common emotional and psychological reactions to aging to include causes and manifestations.
55.04	Discuss the problems with mobility in the elderly and develop strategies to prevent falls.
55.05	Discuss factors that may complicate the assessment of the elderly patient including communication issues and methods to overcome them.
55.06	Describe principles that should be employed when assessing and communicating with the elderly.
55.07	Describe the common causes, assessment and management of the elderly patient with the following complaints:
55.07.01	Pulmonary, including pneumonia, chronic obstructive pulmonary diseases, and pulmonary embolism.
55.07.02	Cardiovascular, including myocardial infarction, heart failure, dysrhythmias, aneurism, and hypertension.
55.07.03	Nervous system, including cerebral vascular disease, delirium, dementia, Alzheimer’s disease and Parkinson’s disease.
55.07.04	Endocrine system, including diabetes and thyroid diseases.
55.07.05	Gastrointestinal problems.
55.07.06	Toxicological problems including alcohol/drug abuse, and polypharmacy errors.
55.07.07	Environmental considerations.
55.07.08	Traumatic injuries, including orthopedic injuries, burns and head injuries.
56.0	<b>Patients with Special Challenges:</b> Demonstrate a simple depth, simple breadth of management of the patient with special challenges. – The student will be able to:
56.01	Define child abuse / neglect

56.02	Define children with special health care needs.
56.03	Discuss the pathophysiology of abuse and neglect in infants and children.
56.04	Discuss the assessment and management/treatment plan for abuse and neglect in infants and children, including documentation and reporting.
56.05	Discuss the pathophysiology of children with special health care needs including technology
56.06	Discuss the assessment management/treatment plan for children with special health care needs including technology assisted children.
56.07	Discuss the incidence and categories of abuse and assault.
56.08	Describe the characteristics associated with the profile of the typical abuser of a spouse, elder and child.
56.09	Identify the profile of the "at-risk" spouse, elder and child.
56.10	Discuss special considerations for the assessment and management of the abused patient.
56.11	Discuss the legal aspects of documentation and mandatory reporting associated with abused and assaulted patient.
56.12	Discuss considerations for approach, assessment and treatment of patients with the following impairments/disabilities: (LIST) Hearing, Vision, and Speech.
56.13	Describe paraplegia/quadriplegia.
56.14	Recognize the patient with a developmental disability.
56.15	Recognize the patient with Down's syndrome.
56.16	Describe the following diseases/illnesses: 56.16.01 Cerebral palsy 56.16.02 Cystic fibrosis 56.16.03 Spina bifida 56.16.04 Patients with a previous head injury
56.17	Identify a patient that is terminally ill.
56.18	Differentiate between the role of EMS provider and the role of the home care provider.
56.19	Discuss the aspects of home care that impact quality of the care for a given patient.
56.20	List complications commonly seen in the home care patients, which result in their hospitalization.
56.21	Define hospice care and comfort care.
56.22	List the stages of the grief process and relate them to an individual in hospice care.

56.23	Describe airway maintenance devices typically found in the home care environment.
56.24	Describe indwelling catheters, implanted central IV ports and central line monitoring.
56.25	Identify failure of GI/GU devices found in the home care setting.
56.26	Identify failure of ventilating devices found in the home care setting.
56.27	Identify failure of vascular access devices found in the home care setting.
56.28	Demonstrate the ability to assess a spouse, elder or child abused patient.
56.29	Demonstrate the ability to assess a sexually assaulted patient.
56.30	Demonstrate the assessment of a patient with a sensory deficit or developmental disability.
56.31	Develop a treatment and management plan of the elderly psychiatric patient, including depression and suicide.
57.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of risks and responsibilities of transport. – The student will be able to:
57.01	Discuss the importance of performing regular vehicle and equipment inspection.
57.02	Demonstrate how to perform a daily inspection of an ambulance.
57.03	Describe the general provisions of Florida laws relating to the operation of the ambulance and privileges. ,
57.04	Identify current local and state standards which influence ambulance design.
57.05	Demonstrate how to place a patient in, and remove a patient from an ambulance.
57.06	Discuss the guidelines for operating an ambulance safety during emergency and non-emergency situation/incident.
57.07	Discuss considerations that are required for ensuring scene safety, including personal safety, patient safety, and traffic control.
57.08	Demonstrate how to clean and disinfect the ambulance and equipment.
58.0	<b>Incident Management:</b> Demonstrate a fundamental depth, fundamental breadth of establishing and working within the incident management system. – The student will be able to:
58.01	Explain the need for the incident management system (IMS)/incident command system (ICS) in managing emergency medical services incidents.
58.02	Define the term disaster management.
58.03	Discuss the importance of NIMS (National Incidence Management System).
58.04	Describe the functional components of the incident management system in terms of the following:
58.04.01	Command

58.04.02	Finance
58.04.03	Logistics
58.04.04	Operations
58.04.05	Planning
58.05	Differentiate between singular and unified command and when each is most applicable.
58.06	Describe the role of command
58.07	Describe the need for transfer of command and procedures for transferring it.
58.08	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents:
58.08.01	safety
58.08.02	logistics
58.08.03	rehabilitation
58.08.04	staging,
58.08.05	treatment
58.08.06	triage
58.08.07	transportation
58.08.08	extrication/rescue
58.08.09	morgue
58.08.10	communications
58.09	Describe techniques used to allocate patients to hospitals and track them.
58.10	List the physical and psychological signs of critical incident stress.
58.11	Explain the organizational benefits for having standard operating procedures (SOPs) for using the incident management system or incident command system.
59.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of responding to an emergency during a multiple casualty incident. – The student will be able to:
59.01	Describe essential elements of scene size-up when arriving at a potential MCI.
59.02	Describe the role of the rescuers and EMS systems in planning for MCIs and disasters.
59.03	Describe the role of the physician at multiple casualty incidents.
59.04	Define triage and describe the principles of triage.
59.05	Describe the START (simple triage and rapid treatment) method of initial triage.
59.06	Describe techniques used to allocate patients to hospitals and track them.
59.07	List and describe the essential equipment to provide logistical support to MCI operations, including but not limited to:;
59.07.01	Airway
59.07.02	respiratory and hemorrhage control

	59.07.03	Burn management
	59.07.04	Patient packaging/immobilization
59.08	List the physical and psychological signs of critical incident stress.	
59.09	Describe the role of critical incident stress management sessions in MCIs.	
59.10	Explain the organizational benefits for having standard operating procedures (SOPs) for using the incident management system or incident command system.	
59.11	Demonstrate the use of local/regional triage tagging system used for primary and secondary triage.	
59.12	Given a classroom simulation of a MCI with 5-10 patients, fulfill the role of triage group leader.	
60.0	<b>Air Medical:</b> Demonstrate a simple depth, simple breadth of safe air medical operations and criteria for utilizing air medical response. – The student will be able to:	
60.01	Discuss safe air medical operations.	
60.02	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.	
60.03	Describe the capabilities, protocols, and methods for accessing air medical transport.	
60.04	Describe the advantages and disadvantages of air medical transport.	
60.05	Identify the conditions/situations in which air medical transport should be considered.	
60.06	Assess personal practices relative to air medical operations which may affect the safety of the crew, the patient and bystanders.	
60.07	Perform setting up an air medical helicopter landing zone.	
61.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth for safe vehicle extrication and use of simple hand tools. – The student will be able to:	
61.01	Describe the role of the EMT in patient rescue and vehicle extrication	
61.02	Describe personal and patient safety during vehicle extrication.	
61.03	Explain the difference between simple access and complex access in vehicle extrication	
61.04	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.	
61.05	Discuss the use of simple hand tools used for vehicle extrication	
61.06	Describe the effects of traffic flow on the highway rescue incident including limited access superhighways and regular access highways.	
61.07	List and describe the hazards associated with the following auto/ truck components:	
	61.07.01	energy absorbing bumpers
	61.07.02	air bag/supplemental restraint systems

61.07.03	catalytic converters and conventional fuel systems
61.07.04	stored energy
61.07.05	alternate fuel systems
61.08	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles.
61.09	Describe the electrical hazards commonly found at highway incidents (above and below ground).
61.10	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
61.11	Explain typical door anatomy and methods to access through stuck doors.
61.12	Explain SRS or "air bag" systems and methods to neutralize them.
61.13	Demonstrate the use of wood cribbing to stabilize a vehicle.
61.14	Demonstrate how to gain access to a patient by using a spring- loaded center punch.
62.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
62.01	Identify resources for substance identification, decontamination and treatment information, including but not limited to the following:
62.01.01	poison control center
62.01.02	medical control
62.01.03	material safety data sheets (MSDS),
62.01.04	reference textbooks
62.01.05	computer databases
62.01.06	Computer-Aided Management of Emergency Operations (CAMEO)
62.01.07	CHEMTREC
62.01.08	technical specialists
62.01.09	Agency for toxic substances and disease registry
62.02	Explain primary and secondary contamination risk.
62.03	List and describe the following routes of exposure:
62.03.01	topical
62.03.02	respiratory
62.03.03	gastrointestinal
62.03.04	parenteral
62.04	Explain how the substance and route of contamination alters triage and decontamination methods.
62.05	List and explain the common signs, symptoms and treatment for the following substances:
62.05.01	corrosives (acids/alkalis)

62.05.02	pesticides (carbamates / organophosphates),
62.05.03	chemical asphyxiants (cyanide/carbon monoxide)
62.05.04	hydrocarbon solvents (xylene, methylene chloride)
62.06	Identify local facilities and resources capable of treating patients
62.07	Determine the appropriate level of PPE by considering the following:
62.07.01	Types
62.07.02	Application
62.07.03	Use and Limitations
62.07.04	Use of chemical compatibility chart
62.08	Explain specific decontamination procedures.
62.09	Demonstrate the donning and doffing of appropriate PPE.
62.10	Set up and demonstrate an emergency two-step decontamination process.
62.11	Identify DOT Labels, placards and markings that are used to designate HAZMAT materials
62.12	Demonstrate the ability to use a variety of reference materials to identify a HAZMAT material
63.0	<b>Mass Casualty Incidents Due to Terrorism and Disaster:</b> Demonstrate a simple depth, simple breadth of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
63.01	Describe the role of the EMT on the scene of a natural or man-made disaster
63.02	Define the different types of terrorism and provide examples of incidents of each.
63.03	Describe personal and patient safety during a natural or man-made disaster.
63.04	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.
63.05	Discuss the National Terrorism Advisory System
63.06	Discuss factors to consider when responding to a terrorist situation
63.07	Discuss important actions to take at the scene of a terrorist event such as:
63.07.01	scene safety
63.07.02	personal protection
63.07.03	notification procedures
63.07.04	available resources
63.07.05	working with in the command system
63.08	List the main categories of weapons of mass destruction
63.09	Discuss the different types of chemical agents and their signs and symptoms



63.10 Discuss the treatment and management of patients exposed to various types of chemical agents and radiation.

63.11 Define the different types of radiations and their effect on the human body.

63.12 Demonstrate the use of a nerve agent antidote kit.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

## **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 12 credits. When offered at a technical center the standard length of this program is 300 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**        **Emergency Medical Technician**  
**Career Cluster:**     **Health Science**

CCC	
CIP Number	0351090415
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics

**Purpose**

This certificate program is part of the Emergency Medical Services AS degree program (1351090402).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This is an instructional program that prepares students for employment as emergency medical technicians SOC Code 29-2041 (Emergency Medical Technicians and Paramedics) to function at the basic pre-hospital emergency medical technician level and treat various medical/trauma conditions using appropriate equipment and materials. The program prepares students for certification as EMT's in accordance with Chapter 64J of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation (DOT) National EMS Education Standards for EMT. This is the initial level for a career in emergency medical services and the primary prerequisite for paramedic training and certification.

The content includes but is not limited to patient assessment, airway management, cardiac arrest, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, acute abdomen, communicable diseases, patients with abnormal behavior, alcohol and drug abuse, the unconscious state, emergency childbirth, burns, environmental hazards, communications, reporting, extrication and transportation of patient. The student must be proficient in patient assessment and evaluation, the use of suctioning

devices, oral and nasal airways, resuscitation devices, oxygen equipment, sphygmomanometer and stethoscope, splints of all types, pneumatic anti-shock garments, extrication tools, dressings and bandages, stretchers and patient carrying devices.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### **Regulated Programs**

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6. Hospital activity shall include a minimum of 20 hours of supervised clinical supervision, including 10 hours in a hospital emergency department. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

Field Internship Activities: Field internship shall include a competency based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include a minimum of 5 emergency runs resulting in patient care and transport appropriate for the EMT. In addition, the patient care components should include minimum competencies in patient assessment, airway management and ventilation, trauma and medical emergencies. This program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome (SUIDS) training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. This program also meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

Please refer to chapter 401 F.S. for more information on disqualification for the EMT license through the Office of Emergency Medical Services (EMS), Department of Health.

An EMT program must be taught by an instructor meeting the qualifications as set forth in 64J-1.201 FAC.

An American Heart Association or Red Cross certification or equivalent in "professional" BLS is required of all candidates for entrance into an EMT program.

The Student Performance Standards for Emergency Medical Technology-EMT were adapted and condensed from the US Department of Transportation (DOT) National EMS Educational Standards for EMT.

It is strongly recommended this program be accredited by Commission on Accreditation of Allied Health Education Programs (CAAHEP).

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a simple depth, foundational breadth of knowledge of EMS systems.
- 02.0 Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making.
- 03.0 Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication.
- 06.0 Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication.
- 07.0 Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics.
- 08.0 Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS.
- 09.0 Demonstrate a fundamental knowledge in the use of medical terminology.
- 10.0 Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation.
- 11.0 Demonstrate a fundamental knowledge of life span development to patient assessment and management.
- 12.0 Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care.
- 13.0 Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency.
- 14.0 Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT.
- 15.0 Demonstrate a foundational depth, fundamental breadth of knowledge of airway management across the life span within the scope of practice of the EMT.
- 16.0 Demonstrate a fundamental depth, foundational breadth of knowledge of respiration.
- 17.0 Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span.
- 18.0 Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations.
- 19.0 Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations.
- 20.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking.
- 21.0 Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment.
- 22.0 Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 24.0 Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints.
- 25.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span.
- 26.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span.
- 27.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span.

- 28.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span.
- 29.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span.
- 30.0 Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span.
- 31.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span.
- 32.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span.
- 33.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 34.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span.
- 35.0 Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergencies across the life span.
- 36.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span.
- 37.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 38.0 Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span.
- 39.0 Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span.
- 40.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span.
- 41.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span.
- 42.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 43.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 44.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.
- 46.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck, and spine trauma across the life span.

- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of trauma patients with special considerations across the life span.
- 49.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of environmental emergencies across the life span.
- 50.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span.
- 51.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT.
- 52.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT.
- 53.0 Demonstrate a fundamental depth, fundamental breath of knowledge of the management of the pediatric patient within the scope of practice of the EMT.
- 54.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT.
- 55.0 Demonstrate a simple depth, simple breadth of knowledge of management of the patient with special challenges across the life span.
- 56.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 57.0 Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system.
- 58.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 59.0 Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response.
- 60.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.



Florida Department of Education  
Student Performance Standards

Program Title:       Emergency Medical Technician  
CIP Number:         351090415  
Program Length:     12 credit hours  
SOC Code(s):        29-2041

**This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:**

01.0	<b>EMS Systems:</b> Demonstrate a simple depth, foundational breadth of knowledge of EMS systems. – The student will be able to:
01.01	Define Emergency Medical Services (EMS) systems.
01.02	Discuss the historical background of the development of the EMS system.
01.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT and PM) as well as the three levels (EMR, EMT, and PM) in the State of Florida.
01.04	Discuss the specific statutes and regulations regarding the EMS system in Florida.
01.05	Discuss vehicle and equipment readiness.
01.06	Characterize the EMS system’s role in prevention and public education.
01.07	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
01.08	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.
01.09	Discuss the maintenance of and differences between certification and licensure for the EMS professional in the State of Florida and NREMT.
01.10	Define quality improvement and discuss the EMT’s role in the process.
01.11	Identify the basics of common methods of payment for healthcare services.
01.12	Analyze attributes and attitudes of an effective leader.
01.13	Demonstrate effective techniques for managing team conflict.
01.14	Describe factors that influence the current delivery system of healthcare.
01.15	Discuss the importance of continuing medical education and skills retention.

01.16	Assess personal attitudes and demeanor that may distract from professionalism.
01.17	Serve as a role model and exhibit professional behaviors in the following areas:
01.17.01	integrity
01.17.02	empathy
01.17.03	self-motivation
01.17.04	appearance and personal hygiene
01.17.05	self-confidence
01.17.06	communications ( including phone, email and social media etiquette)
01.17.07	time management
01.17.08	teamwork and diplomacy
01.17.09	respect
01.17.10	patient advocacy (inclusive of those with special needs, alternate life styles and cultural diversity)
01.17.11	careful delivery of service
02.0	<b>Research:</b> Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making. – The student will be able to:
02.01	Discuss EMS research and evidence based decision making
02.01.01	Conduct scientific literature searches
02.01.02	Read, interpret, and extract information from journal articles relevant to a project
02.02	Explain the importance of assessing and treating patients based on evidence based decision-making.
02.03	Interpret graphs, charts, and tables.
02.04	Measure time, temperature, distance, capacity, and mass/weight.
02.05	Convert and use traditional and metric units.
02.06	Make estimations, approximations and judge the reasonableness of the result.
02.07	Convert time from a 12 hour format to a 24 hour format
02.08	Demonstrate ability to evaluate and draw conclusions.
02.09	Calculate ratios.
02.10	Explain the rationale for the ems system gathering data.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Explain the need to determine scene safety.
03.02	Discuss the importance of body substance isolation (BSI).

03.03	Describe the steps and equipment the EMT should take for personal protection from airborne and blood borne pathogens and communicable disease.
03.04	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
03.05	Discuss the steps the EMT should take when approaching a family confronted with death and dying.
03.06	Recognize the warning signs of personal stress and discuss the strategies and resources available for EMTs to utilize.
03.07	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
03.08	Discuss the guidelines and safety precautions to be followed when lifting and moving patients and equipment.
03.09	Discuss patient positioning in common emergency situations.
03.10	Discuss situation that may require the use of medical restraints on the patient and explain guidelines and safety consideration for their use.
03.11	Define “infectious disease” and “communicable disease.”
03.12	Describe the routes of transmission and associated risks for infectious disease.
03.13	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis and HIV.
03.14	Explain how immunity to infectious diseases is acquired.
03.15	Explain post exposure management of exposure to patient blood or body fluids, including proper notification documentation.
03.16	Describe the components of physical fitness and mental wellbeing.
03.17	Identify personal health practices and environmental factors, which affect physical, mental, and emotional wellbeing.
03.18	Discuss complementary and alternative health practices.
03.19	Explain the basic concepts of positive self-image, wellness and stress.
03.20	Discuss the need for a wellness and stress control plan that can be used in personal and professional life.
03.21	Explore the importance of adequate nutrition (i.e. U.S. Department of Agriculture’s MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> )).
03.22	Demonstrate safe behaviors in the proper use of medical equipment.
03.23	Explain the theory of root- cause analysis.
03.24	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
03.25	Identify and practice security procedures for medical supplies and equipment in the various healthcare settings.

	03.26 Describe fire, safety, disaster and evacuation procedures in the various healthcare settings.
	03.27 Discuss applicable accrediting and regulatory agency patient safety guidelines.
04.0	<b>Documentation:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing. – The student will be able to:
	04.01 Discuss applications of technology in healthcare.
	04.02 Demonstrate basic computer skills.
	04.03 Interpret and utilize information from electronic health records.
	04.04 Identify methods of electronic communication to access and distribute data.
	04.05 Describe the use and importance of properly written communication and patient care documentation.
	04.06 Explain the legal implication of the patient care report.
	04.07 Identify the minimum dataset reference patient information and administrative information on the patient care report.
	04.08 Understand how to document refusal of care, including legal implications.
	04.09 Discuss the implications of the Health Insurance Portability and Accountability Act of 1996 on confidential documentation.
	04.10 Describe the special considerations concerning mass casualty incident documentation.
	04.11 Demonstrate completion of a patient care report for a medical and trauma patient.
05.0	<b>EMS System Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication. – The student will be able to:
	05.01 Understand the basic principles of the various types of communications equipment used in EMS.
	05.02 Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.
	05.03 Explain the rationale for providing efficient and effective radio communications and patient reports.
	05.04 Identify the essential components of the verbal report and legal aspects that need to be considered.
	05.05 Perform an organized and concise radio transmission.
	05.06 Perform an organized, concise verbal patient report that would be given to the staff at a receiving facility.
	05.07 Perform a brief, organized verbal report that would be given during transfer of care at an incident scene.
06.0	<b>Therapeutic Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication. – The student will be able to:

06.01	Describe principles of therapeutic and effective communication with patients.
06.02	Discuss basic speaking and active listening skills.
06.03	Recognize the importance of patient/client educations regarding healthcare.
06.04	Discuss the adjustment of communication strategies to effectively communicate with patients with:
06.04.01	differing age groups
06.04.02	differing developmental stages
06.04.03	special needs
06.04.04	differing cultures, including language barriers
06.05	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
06.06	Discuss the strategies for interviewing persons in special situations.
06.07	Distinguish between and respond to verbal and non-verbal cues.
06.08	Analyze elements of communication using a sender-receiver/close loop model.
06.09	Exhibit positive non-verbal behaviors.
06.10	Establish proper patient rapport.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics. – The student will be able to:
07.01	Discuss the rational, importance, and limitations of patient autonomy.
07.02	Differentiate between expressed, implied and involuntary consent.
07.03	Discuss the methods of obtaining consent and procedures for minors.
07.04	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
07.05	Discuss the implications for the EMT in patient refusal of care and/or transport.
07.06	Explain the importance, necessity and legality of patient confidentiality.
07.07	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
07.08	Discuss State of Florida and Federal special reporting situations including:
07.08.01	abuse
07.08.02	sexual assault
07.08.03	gunshot and knife wounds
07.08.04	communicable disease
07.08.05	animal Bites

07.09	Differentiate between civil tort and criminal actions.
07.10	Discuss the elements of negligence and defenses/protections from liability.
07.11	Discuss the role of the EMT at crime scenes and preservation of evidence.
07.12	Define ethics and morality and discuss their implication for the EMT.
07.13	Discuss Florida legislation such as:
07.13.01	Baker Act (FS 394.451)
07.13.02	Marchman Act (FS 397.601 and FS 397.675)
07.13.03	Emergency Examination and Treatment of Incapacitated Persons Act (FS 401.445)
07.14	Differentiate between the scope of practice and the standard of care as applied to the EMT.
07.15	Discuss the legal concepts and limitations of immunity, including Good Samaritan statutes and governmental immunity.
07.16	Describe the appropriate patient management and care techniques in a refusal of care situation.
07.17	Analyze the relationship between the law, morals and ethics in EMS and the premise that should under lie the EMTs ethical decisions.
07.18	Describe the criteria necessary to honor an advance directive.
07.19	Explain the rationale for the needs, benefits and varying degrees of advance directives.
08.0	<b>Anatomy and Physiology:</b> Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. – The student will be able to:
08.01	Identify the following topographic terms:
08.01.01	medial
08.01.02	lateral
08.01.03	proximal
08.01.04	distal
08.01.05	superior
08.01.06	inferior
08.01.07	anterior
08.01.08	posterior
08.01.09	midline
08.01.10	right and left
08.01.11	mid-clavicular
08.01.12	bilateral
08.01.13	mid-axillary
08.02	Describe the life support chain, aerobic metabolism, and anaerobic metabolism.
08.03	Define anatomy, physiology, pathophysiology, and homeostasis.

08.04	Identify and describe the anatomical structures and functions of the following:
08.04.01	skeletal system
08.04.02	muscular system
08.04.03	respiratory System
08.04.04	circulatory/ Cardiovascular system
08.04.05	nervous System
08.04.06	integumentary system
08.04.07	digestive system
08.04.08	endocrine system
08.04.09	renal system
08.04.10	reproductive system
08.04.11	lymphatic System
08.05	Explain cellular anatomy and physiology.
08.06	Explain cellular respiration.
08.07	Discuss cell division.
08.08	Describe the different types of muscle tissues including skeletal, smooth and cardiac.
08.09	Name and identify the location of the bones of the axial and appendicular skeleton.
08.10	Describe the classification and types of joints.
08.11	Discuss the mechanisms of breathing including:
08.11.01	mechanical ventilation
08.11.02	pulmonary volumes
08.11.03	dead space
08.11.04	lung compliance
08.12	Explain the diffusion of gases in external and internal respiration.
08.13	Describe oxygen and carbon dioxide transport in the blood.
08.14	Describe nervous and chemical mechanisms that regulate respirations.
08.15	Discuss respiration and acid-base balance.
08.16	Discuss the hemodynamics of blood pressure.
08.17	Discuss the role of nutrition, metabolism and body temperature on body function.
08.18	Describe the causes, advantages and disadvantages of a fever.
08.19	Discuss the hypothalamus functions as the thermostat in the body.

09.0	<b>Medical Terminology:</b> Demonstrate a fundamental knowledge in the use of medical terminology. – The student will be able to:
09.01	Identify medical terminology word parts such as:
09.01.01	root words
09.01.02	prefixes
09.01.03	suffixes
09.01.04	combining forms
09.02	Correctly utilize medical terminology describing each of the following:
09.02.01	body structures
09.02.02	functions
09.02.03	conditions and disorders
09.02.04	body regions
09.02.05	cavities
09.02.06	areas
09.02.07	landmarks
09.03	Correctly use medical abbreviations and symbols.
09.04	Read and understand basic medical documentation in medical records and medical reports.
09.05	Communicate with healthcare professionals utilizing basic medical terminology.
09.06	Explain the rationale for using accepted medical terminology correctly.
10.0	<b>Pathophysiology:</b> Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation. – The student will be able to:
10.01	Discuss signs of irreversible death.
10.02	Review the anatomy and physiology of the respiratory and cardiovascular systems.
10.03	Discuss and identify the pathophysiology of respiratory failure and respiratory and cardiac arrest.
10.04	Understand shock, including the pathophysiology, causes, and the signs and symptoms associated with the various types of shock.
10.05	Discuss the variations in the pathophysiology of shock across the life span.
11.0	<b>Life Span Development:</b> Demonstrate a fundamental knowledge of life span development to patient assessment and management. – The student will be able to:
11.01	Describe the major physiologic and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care. – The student will be able to:
12.01	Define public health and explain the goal of the public health field.



12.02	Identify the EMS role within the public health field.
12.03	Discuss basic concepts of epidemiology.
12.04	Discuss ways of EMS involvement in injury prevention.
12.05	Identify areas of need for prevention programs in the community.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency. –The student will be able to:
13.01	Explain the “rights” of medication administration and describe how each one related to EMS.
13.02	Discuss and differentiate the various medication forms and the appropriate routes of administration
13.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
13.04	Discuss the components and elements of a drug profile including:
13.04.01	class
13.04.02	actions
13.04.03	contraindications
13.04.04	side effects
13.04.05	dose
13.04.06	route
13.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
14.0	<b>Emergency Medications:</b> Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT. – The student will be able to:
14.01	State the following for each medication that can be administered by an EMT as dictated by the State of Florida and local medical direction :
14.01.01	class
14.01.02	generic and trade names
14.01.03	actions
14.01.04	indication
14.01.05	contraindications
14.01.06	complications
14.01.07	routes of administration
14.01.08	side effects
14.01.09	interactions
14.01.10	Doses of medications
14.02	Discuss the forms in which the medications may be found.
14.03	Demonstrate the steps in properly inspecting each type of medication.

14.04	Discuss the difference between administration versus assistance of patient medications.
15.0	<b>Airway Management:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of airway management across the life span within the scope of practice of the EMT. – The student will be able to:
15.01	Review the structures and functions of the respiratory system.
15.02	Describe appropriate airway management for a patient with or without adequate breathing.
15.03	Describe indications for and demonstrate the steps in performing the head-tilt chin-lift and jaw thrust in all age groups.
15.04	Define, identify and describe the following:
15.04.01	tracheostomy
15.04.02	laryngectomy
15.04.03	stoma
15.04.04	tracheostomy tube
15.05	Describe the special considerations in airway management for the pediatric patient.
15.06	Demonstrate the techniques of suctioning.
15.07	Demonstrate relief of FBAO.
15.08	Demonstrate how to insert an oral and nasal -airway adjunct.
15.09	Demonstrate how to insert both esophageal and supra-glottic airways.
16.0	<b>Respirations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of respiration. – The student will be able to:
16.01	Review the pulmonary ventilation process to include mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.).
16.02	Describe the oxygenation process.
16.03	Explain both external and internal respiration process.
16.04	Discuss the various pathophysiologies of the respiratory system.
16.05	Describe assessment and management for adequate and inadequate respiration, including the use of pulse oximetry and capnography.
16.06	Describe the following regarding supplemental oxygen delivery devices:
16.06.01	indications
16.06.02	contraindications
16.06.03	advantages
16.06.04	disadvantages
16.06.05	complications
16.06.06	liter flow range

16.06.07	concentration of delivered oxygen
16.06.08	procedures
16.06.09	purpose
16.06.10	components
16.07	Review the anatomy and physiology of the respiratory system including:
16.07.01	control of respirations
16.07.02	mechanics of respiration
16.07.03	pulmonary ventilation
16.07.04	oxygenation
16.07.05	mechanical ventilation
16.08	Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
16.09	Demonstrate the correct operation of oxygen tanks and regulators.
16.10	Demonstrate the use of high, medium, low, and variable concentration oxygen delivery devices for all age groups.
16.11	Discuss the use of an oxygen humidifier and the requirements needed for its use.
16.12	Discuss the differences between negative pressure and positive pressure ventilation.
17.0	<b>Artificial Ventilations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span. – The student will be able to:
17.01	Demonstrate how to ventilate a patient with a pocket mask.
17.02	Demonstrate the safe and effective ventilation for a patient with a BVM for one or two rescuers using oral-nasal adjuncts with appropriate airway positioning.
17.03	Discuss the signs of adequate and inadequate ventilation using the BVM.
17.04	Describe the steps involved in performing a comprehensive assessment of ventilations.
17.05	Demonstrate how to ventilate a patient with a stoma.
17.06	Demonstrate the use of various devices used in the assessment of supra-glottic airway placement.
17.07	Describe the following for a patient with an automatic transport ventilator (ATV):
17.07.01	indications
17.07.02	contraindications
17.07.03	advantages
17.07.04	disadvantages
17.07.05	complications
17.07.06	technique for ventilating
17.08	Describe the following for a patient with a CPAP:
17.08.01	indications

	17.08.02	contraindications
	17.08.03	advantages
	17.08.04	disadvantages
	17.08.05	complications
	17.08.06	technique for ventilating
18.0	<b>Scene Size-Up:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations. – The student will be able to:	
18.01	Recognize and describe hazards/potential hazards at the scene.	
18.02	Discuss common mechanisms of injury/nature of illness.	
18.03	Discuss the priority considerations for multiple-patient situations.	
18.04	Explain why it is important for the EMT to anticipate and determine the need for additional or specialized resources.	
18.05	Discuss the importance of continuous scene assessment to ensure safety of the EMS team and the patient.	
18.06	Discuss the minimum standard precautions that should be followed and PPE that should be worn as appropriate.	
18.07	Discuss special considerations for dealing with a violent scene.	
18.08	Explain the rationale for crew members to evaluate scene safety prior to entering.	
18.09	Explain how patient situations affect your evaluation of mechanism of injury or illness.	
19.0	<b>Primary Assessment:</b> Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations. – The student will be able to:	
19.01	Summarize the elements of a general impression of the patient.	
19.02	Explain the reason for performing a primary assessment.	
19.03	Discuss and demonstrate methods of assessing level of responsiveness using AVPU.	
19.04	Discuss and demonstrate methods of assessing the airway and providing airway care across the life span.	
19.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.	
19.06	Differentiate between a patient with adequate and inadequate breathing.	
19.07	Describe and demonstrate the methods used to obtain a pulse across the life span.	
19.08	Discuss and demonstrate assessing the patient for external bleeding.	
19.09	Describe and demonstrate the assessment and interpretation of skin color, temperature, moisture and capillary refill across the life span.	

19.10	Explain the reasons prioritizing a patient for care and transport.
19.11	Describe when it is appropriate to expose the patient completely.
19.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
20.0	<b>History-Taking:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking. – The student will be able to:
20.01	Determine and investigate the chief complaint.
20.02	Describe components of the patient history.
20.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
20.04	Acknowledge the feelings patients experience during assessment.
20.05	Discuss the value of obtaining a family and social history.
20.06	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
21.0	<b>Secondary Assessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment. – The student will be able to:
21.01	Discuss the components and techniques of the physical exam and skills involved.
21.02	Discuss the indications for performing:
21.02.01	rapid assessment
21.02.02	focused exam
21.02.03	head to toe exam
21.03	Demonstrate:
21.03.01	rapid exam
21.03.02	focused exam
21.03.03	head to toe exam
21.04	Describe and demonstrate the techniques of inspection, palpation, percussion, and auscultation.
21.05	Describe and demonstrate the importance of obtaining a baseline set of vital signs.
21.06	Discuss blood pressure ranges across the life span.
22.0	<b>Monitoring Devices:</b> Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT. – The student will be able to:
22.01	Describe and demonstrate the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies.
22.01.01	pulse oximetry
22.01.02	glucometry

	22.01.03	capnography
	22.01.04	noninvasive BP monitoring
	22.01.05	thermometry
	22.01.06	telemetry
	22.02	Demonstrate proper placement of a cardiac monitor and diagnostic ECG leads.
23.0	<b>Reassessment:</b>	Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations. – The student will be able to:
	23.01	Describe the components of reassessment and demonstrate the skills involved.
	23.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
	23.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
	23.04	Demonstrate the reassessment of patients across the life span.
24.0	<b>Medical Overview:</b>	Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints. – The student will be able to:
	24.01	Identify factors that complicate patient assessment:
	24.01.01	scene safety
	24.01.02	environmental factors
	24.01.03	chief complaint
	24.01.04	EMT preconceptions
	24.01.05	distracting injuries
	24.01.06	tunnel vision
	24.01.07	patient cooperation
	24.01.08	EMT attitude
	24.02	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
25.0	<b>Neurology:</b>	Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span. – The student will be able to:
	25.01	Review the anatomy and physiology of the nervous system.
	25.02	Describe the pathophysiology of the following neurologic disorders:
	25.02.01	altered mental status
	25.02.02	stroke
	25.02.03	transient ischemic attack
	25.02.04	headache
	25.02.05	seizures
	25.02.06	syncope
	25.03	Discuss and identify the causes, signs and symptoms of ischemic strokes, hemorrhagic strokes, and transient ischemic attacks and their similarities and differences.

25.04	Discuss and demonstrate how to use a stroke scoring system in the assessment of patients with suspected stroke.
25.05	Define and differentiate generalize seizure, partial seizure and status epilepticus and list their possible causes.
25.06	Define and differentiate migraine headache, sinus headache, tension headache and discuss how to distinguish harmless headaches from something more serious.
25.07	Define “altered mental status” and identify the possible causes.
25.08	Describe and demonstrate the assessment and management of the patient with various neurological emergencies in all age groups to include:
25.08.01	strokes
25.08.02	headaches
25.08.03	seizures
25.08.04	altered mental status
25.09	Discuss the transport of the stroke patient to the appropriate treatment center.
26.0	<b>Abdominal and Gastrointestinal Disorder:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
26.01	Review the basic anatomy and physiology the gastrointestinal, genital and urinary systems.
26.02	Define and describe the pathophysiology of the following abdominal and gastrointestinal disorders:
26.02.01	abdominal pain
26.02.02	acute abdomen
26.02.03	peritonitis
26.02.04	appendicitis
26.02.05	pancreatitis
26.02.06	cholecystitis
26.02.07	gastrointestinal bleeding
26.02.08	esophageal varices
26.02.09	gastroenteritis
26.02.10	ulcers
26.02.11	intestinal obstruction
26.02.12	hernia
26.02.13	abdominal aortic aneurysm
26.03	Identify the signs and symptoms of common GI disorders.
26.04	Describe and demonstrate the assessment and management of the patient with various gastrointestinal emergencies.
26.05	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.
27.0	<b>Immunology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span. – The student will be able to:

27.01	Define and differentiate allergic reaction and anaphylaxis.
27.02	Describe the pathophysiology of the following immunology disorders: 27.02.01 allergic reaction 27.02.02 anaphylaxis 27.02.03 anaphylactic shock
27.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an allergic or anaphylactic reaction.
27.04	Review the following for the epinephrine auto-injector: 27.04.01 generic and trade names 27.04.02 medication forms 27.04.03 dose 27.04.04 administration 27.04.05 action 27.04.06 contraindications
27.05	Demonstrate the use of epinephrine auto-injector.
27.06	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
27.07	Describe the incidence, morbidity and mortality of anaphylaxis.
27.08	Recognize the signs and symptoms related to anaphylaxis.
27.09	Describe the risk factors for and prevention of anaphylaxis and appropriate patient education.
27.10	Discuss common antigens most frequently associated with anaphylaxis.
27.11	Explain the importance of separating the patient from the allergen when possible.
28.0	<b>Infectious Disease:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span. – The student will be able to:
28.01	Discuss the causes of infectious diseases
28.02	Describe the pathophysiology of infectious diseases of significant public health concern.
28.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an infectious disease.
28.04	Discuss mandatory notification to State or Federal agencies of various diseases.
28.05	Identify patients with risk factors for infectious disease.
28.06	Explain the principles and practices of infection control in prehospital care.
28.07	Describe and discuss the rationale for the various types of PPE.



28.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).
28.09	Discuss decontamination of the ambulance and disinfection of patient care equipment, and areas in which care of the patient occurred.
28.10	Describe the actions to take if the EMS provider is exposed to an infectious disease.
28.11	Demonstrate the ability to comply with body substance isolation guidelines.
28.12	Discuss the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS)
29.0	<b>Endocrine Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span. – The student will be able to:
29.01	Review the anatomy and physiology of the endocrine system and its main function in the body.
29.02	Describe the pathophysiology and signs and symptoms of the following endocrine disorders:
29.02.01	Insulin Dependent Diabetes Mellitus
29.02.02	Non-Insulin Dependent Diabetes Mellitus
29.02.03	hypoglycemia
29.02.04	hyperglycemia
29.02.05	Diabetic Ketoacidosis(DKA)
29.02.06	Hyperglycemic Hyperosmolar Non-ketotic Syndrome (HHNS)
29.03	Define and differentiate between Type I and Type II Diabetes.
29.04	Identify and demonstrate the steps in the management of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
29.05	Review the following for oral glucose:
29.05.01	generic and trade names
29.05.02	medication forms
29.05.03	dose
29.05.04	administration
29.05.05	action
29.05.06	contraindications
29.06	Demonstrate the steps of using a glucometer device and administering oral glucose.
29.07	Describe and demonstrate the assessment and the management of the patient experiencing an endocrinologic emergency to include hypo- and hyper-glycemia.
29.08	Discuss the general assessment findings associated with endocrinologic emergencies.
30.0	<b>Psychiatric:</b> Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span. – The student will be able to:
30.01	Differentiate among behavior, psychiatric disorders and behavioral emergencies

30.02	Discuss common psychiatric disorders and behavioral emergencies.
30.03	Discuss the general factors that may cause an alteration in a patient's behavior.
30.04	Discuss the risk factors/signs or symptoms of various psychiatric emergencies to include suicide.
30.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
30.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
30.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
30.08	Describe the special considerations for the safety of the EMS provider and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
30.09	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency.
30.10	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.0	<b>Cardiovascular:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span. – The student will be able to:
31.01	Review the basic anatomy and physiology of the cardiovascular system.
31.02	Describe the pathophysiology and signs and symptoms of the following cardiovascular disorders:
31.02.01	acute coronary syndrome
31.02.02	angina pectoris
31.02.03	thromboembolism
31.02.04	myocardial infarction
31.02.05	hypertensive emergencies
31.02.06	aortic aneurysm/dissection
31.02.07	left and right sided heart failure
31.02.08	cardiogenic shock
31.02.09	cardiac arrest
31.03	Describe and demonstrate the assessment and management of the patient experiencing a cardiac emergency.
31.04	Discuss the indications and contraindications for automated external defibrillation (AED).
31.05	Explain the impact of age and weight on defibrillation.
31.06	Discuss the position of comfort for patients with various cardiac emergencies.
31.07	Explain the rationale for early defibrillation.
31.08	Discuss and differentiate among various types of external defibrillators.

31.09	Discuss and differentiate among the various types of implanted cardiac devices.
31.10	Understand the importance of maintenance and operators check list for AED's.
31.11	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.
31.12	Explain the role medical direction plays in the use of automated external defibrillation.
31.13	Explain the rationale for administering nitroglycerin and ASA to a patient with chest pain or discomfort.
31.14	Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
31.15	Demonstrate the assessment and documentation of patient response to nitroglycerin.
31.16	Discuss the purpose and use of CPR assist devices.
32.0	<b>Toxicology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span. – The student will be able to:
32.01	Define and differentiate among toxicology, poisoning, and overdose.
32.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
32.02.01	food poisoning
32.02.02	carbon monoxide poisoning
32.02.03	cyanide poisoning
32.02.04	exposure to acid or alkaline substances
32.02.05	exposure to hydrocarbons
32.02.06	methanol ingestion
32.02.07	isopropanol ingestion
32.02.08	ethylene glycol ingestion
32.02.09	exposure to poisonous plants
32.02.10	drug withdrawal
32.02.11	alcoholic syndrome
32.02.12	withdrawal syndrome (including delirium tremens)
32.02.13	illicit drug use
32.02.14	medication overdose
32.02.15	opioid overdose
32.02.16	organa phosphate overdose
32.03	Discuss various ways that toxins enter the body.
32.04	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
32.05	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
32.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.

32.07	Review the following for Narcan (naloxone):
32.07.01	generic and trade names
32.07.02	medication forms
32.07.03	dose
32.07.04	administration
32.07.05	action
32.07.06	contraindications
33.0	<b>Respiratory:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span – The student will be able to:
33.01	Review the basic anatomy and physiology of the respiratory system.
33.02	Describe the pathophysiology and signs and symptoms of the following respiratory disorders:
33.02.01	chronic obstructive pulmonary disease
33.02.02	asthma
33.02.03	pulmonary edema
33.02.04	spontaneous pneumothorax
33.02.05	hyperventilation syndrome
33.02.06	cystic fibrosis
33.02.07	pulmonary embolism
33.02.08	pneumonia
33.02.09	viral respiratory infections
33.02.10	poisonous exposures
33.02.11	bacterial respiratory infections
33.03	Discuss signs of adequate air exchange.
33.04	Discuss the signs and symptoms of a patient across the continuum from respiratory distress to failure.
33.05	Describe and demonstrate the assessment and management of the patient with a respiratory emergency.
33.06	Review the following for the metered-dose inhalers and small volume nebulizers for medications within the scope of practice of the EMT:
33.06.01	generic name
33.06.02	medication forms
33.06.03	dose
33.06.04	administration
33.06.05	action
33.06.06	indications
33.06.07	contraindications
33.07	Describe and demonstrate the steps in facilitating the use of an inhaler and a small volume nebulizer.
33.08	Differentiate between upper and lower airway obstruction.

33.09	Demonstrate assessment and interpretation of normal and abnormal lung and breath sounds.
34.0	<b>Hematology:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span. –The student will be able to:
34.01	Review the compositions and functions of blood and plasma.
34.02	Describe the pathophysiology of the following hematology disorders:
34.02.01	anemia
34.02.02	Sickle Cell Anemia / Sickle Cell Crisis
34.02.03	hemophilia
34.03	Describe and demonstrate the assessment and the management of the patient with a hematological disorder.
35.0	<b>Genitourinary /Renal:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of genitourinary/ renal emergency across the life span. – The student will be able to:
35.01.01	Review the basic anatomy and physiology of the genitourinary and renal systems.
35.02	Describe the pathophysiology and signs and symptoms of the following genitourinary/ renal disorders:
35.02.01	urinary tract infection
35.02.02	kidney stones
35.02.03	kidney failure
35.03	Discuss the basic principles of kidney dialysis.
35.04	Discuss the recognition and complications of urinary catheters.
35.05	Describe and demonstrate the assessment and management of the patient with a dialysis emergency.
36.0	<b>Gynecology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span. – The student will be able to:
36.01	Review the basic anatomy and physiology of the female reproductive system.
36.02	Describe the pathophysiology and signs and symptoms of the following gynecologic disorders and emergencies, including but not limited to:
36.02.01	sexual assault
36.02.02	non-traumatic vaginal bleeding
36.02.03	menstrual pain
36.02.04	ovarian cyst
36.02.05	endometritis
36.02.06	endometriosis
36.02.07	pelvic inflammatory disease
36.02.08	Sexually Transmitted Disease
36.03	Describe and demonstrate the assessment and management of the patient experiencing a gynecologic emergency.
36.04	Describe the assessment and management of a patient who has experienced a sexual assault including the psychosocial impact and

	assessment findings/presentations.
36.05	Discuss the professional and psychological importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
36.06	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
37.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
37.01	Review the basic anatomy and physiology of the musculoskeletal system.
37.02	Describe and demonstrate the assessment and management of the patient in all age groups with a non-traumatic musculoskeletal emergency.
38.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span –The student will be able to:
38.01	Describe and demonstrate the assessment and management of the patient in all age groups with abnormal conditions affecting the eyes, ears, nose and throat, including epistaxis.
39.0	<b>Shock and Resuscitation:</b> Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span. – The student will be able to:
39.01	Discuss and identify causes and pathophysiology of the categories of hemorrhage and shock.
39.02	Review causes and pathophysiology of respiratory failure and arrest.
39.03	Review causes and pathophysiology of cardiac failure or arrest.
39.04	Discuss the various types and degrees of shock.
39.05	Discuss post resuscitation management.
39.06	Explain the system components of CPR, the links in the AHA chain of survival and how each relates to patient survival.
39.07	Define and differentiate between compensated and decompensated shock.
39.08	Discuss the importance of teamwork in the successful management of the critical patient.
39.09	Demonstrate how to perform one and two rescuer CPR, adult, child, and infant.
39.10	Demonstrate how to perform rescuer level appropriate defibrillation in an adult, child, and infant patient.
39.11	Demonstrate rapid decision making based on differential field diagnosis of the critical patient with a peri-arrest condition.
39.12	Describe and demonstrate the assessment and management of the patient with hemorrhage and shock.
40.0	<b>Trauma Overview:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span. – The student will be able to:

40.01	Discuss pathophysiology of the trauma patient.
40.02	Discuss the components of a comprehensive trauma systems and levels of trauma centers.
40.03	Describe the considerations for different transportation modes to a trauma center.
40.04	Discuss the kinematics of blunt and penetrating trauma.
40.05	Discuss and describe significant and non-significant Mechanism of Injury (MOI) and provide examples of each.
40.06	Demonstrate the application of the State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code (F.A.C.).
40.07	Discuss the National Trauma Triage Protocol of injured Patients.
40.08	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
40.09	Identify the need for rapid intervention transport of the trauma patient.
41.0	<b>Bleeding:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span. – The student will be able to:
41.01	Review the anatomy and physiology of the circulatory system.
41.02	Discuss the different types of bleeding and classes of hemorrhage.
41.03	Review signs and symptoms of shock (hypo-perfusion).
41.04	Demonstrate effective hemorrhage control to include application of a tourniquet.
41.05	Review the pathophysiology of hemorrhagic shock.
41.06	Recognize the need for rapid transport for patients that are bleeding and showing signs of shock (hypo-perfusion).
41.07	Describe and demonstrate the assessment and management of a patient with hemorrhagic shock.
41.08	Discuss the possible complications of an improperly applied dressing, bandage, tourniquet, and hemostatic agents.
42.0	<b>Chest Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of chest trauma across the life span. –.The student will be able to:
42.01	Review the anatomy and physiology of the thoracic/chest cavity and respiratory system.
42.02	Differentiate between a pneumothorax (open, simple and tension) and hemothorax.
42.03	Discuss the pathophysiology, signs and symptoms, and MOI of myocardial injuries, including the following:
42.03.01	pericardial tamponade
42.03.02	myocardial contusion
42.03.03	myocardial rupture

	42.03.04	commotio cordis
	42.03.05	aortic sheerer
42.04	Discuss the pathophysiology, signs and symptoms, and MOI of specific chest wall injuries, including the following:	
	42.04.01	rib fracture
	42.04.02	flail segment
	42.04.03	sternal fracture
42.05	Describe and demonstrate the assessment and management of chest trauma.	
43.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of abdominal and genitourinary trauma across the life span. – The student will be able to:	
43.01	Review the anatomy and physiology of the abdominal cavity and genitourinary system.	
43.02	Discuss the pathophysiology, signs and symptoms, and MOI for abdominal trauma including hollow and solid injuries.	
43.03	Describe and demonstrate the assessment and management of a patient with a suspected abdominal or genitourinary injury/trauma.	
44.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:	
44.01	Review the anatomy and physiology of the musculo-skeletal system.	
44.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.	
44.03	Discuss the different types of orthopedic trauma including fracture classifications.	
44.04	Explain the rationale for stabilization of an injured extremity.	
44.05	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma.	
44.06	Discuss the following management techniques:	
	44.06.01	heat therapy
	44.06.02	cold therapy
	44.06.03	splinting
44.07	List the six “P’s” of orthopedic injury assessment.	
44.08	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.	
44.09	Review age-associated changes in the bones.	
44.10	Discuss the proper procedures to package an amputated body part for replantation.	
44.11	Explain the rationale for splinting at the scene versus load and go.	
44.12	Demonstrate the proper use of various splinting materials and devices to include improvised and traction splints.	



45.0	<b>Soft Tissue Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
45.01	Review anatomy and physiology of the integumentary system to include the layers of the skin.
45.02	Describe the pathophysiology, signs and symptoms, and MOI of soft tissue trauma.
45.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
45.04	Identify types of burn injuries, including:
45.04.01	thermal burn
45.04.02	chemical burn
45.04.03	electrical burn
45.04.04	radiation exposure
45.05	Describe the depth classifications of burn injuries, including:
45.05.01	superficial burn
45.05.02	partial-thickness burn
45.05.03	full-thickness burn
45.05.04	other depth classifications
45.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines,” the “rule of palms,” and other methods.
45.07	Explain how the seriousness of a burn is related to its depth and percent of body surface area (BSA) involved.
45.08	Review the various management techniques for hemorrhage control.
45.09	Differentiate among the types of injuries requiring the use of an occlusive versus non- occlusive dressing.
45.10	Demonstrate the assessment and management of specific burn injuries including:
45.10.01	thermal
45.10.02	inhalation
45.10.03	chemical
45.10.04	electrical
45.10.05	radiation
46.0	<b>Head, Facial, Neck, and Spine Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck and spine trauma across the life span. – The student will be able to:
46.01	Review the anatomy and physiology of the head, face, neck and spine.
46.02	Describe the pathophysiology, signs and symptoms, and MOI for head, face, neck, and spine trauma.

46.03	Describe and demonstrate the assessment and management of a patient with the following traumas to the head, face, neck, and spine:
46.03.01	penetrating neck trauma
46.03.02	laryngotracheal injury
46.03.03	skull fracture
46.03.04	facial fracture
46.03.05	eye injury (foreign body)
46.03.06	dental trauma
46.04	Recognize and manage life threats due to face, head, neck, and spine trauma.
46.05	Discuss and demonstrate the utilization of the Glasgow Coma Scale.
47.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span. – The student will be able to:
47.01	Review the anatomy and physiology of the nervous system.
47.02	Discuss the pathophysiology, signs and symptoms, and MOI for brain and spinal cord trauma.
47.03	Describe and demonstrate the assessment and management of a patient with a brain and/or spinal cord trauma.
47.04	Discuss the rationale and potential complications of spinal motion restriction of the entire spine when a cervical spine injury is suspected.
47.05	Given a scenario, discuss whether or not to remove a helmet prior to transport of a patient.
47.06	Demonstrate various methods for stabilization and removal of a helmet.
47.07	Discuss documentation of assessment before, during, and after spinal motion restriction.
48.0	<b>Special Considerations in Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of trauma patients with special considerations across the life span. – The student will be able to:
48.01	Review the anatomy and physiology for the following trauma patients:
48.01.01	pregnant
48.01.02	pediatric
48.01.03	geriatric
48.02	Discuss the pathophysiology, signs and symptoms, and MOI of trauma in the following patients:
48.02.01	pregnant
48.02.02	pediatric
48.02.03	geriatric
48.03	Discuss and demonstrate unique assessment and management considerations for the following trauma patients:
48.03.01	pregnant
48.03.02	pediatric

	48.03.03	geriatric
	48.03.04	cognitively impaired
49.0	<b>Environmental Emergencies:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of environmental emergencies across the life span. – The student will be able to:	
49.01	Define drowning and discuss its incidence, risk factors and prevention.	
49.02	Discuss the pathophysiology, signs and symptoms, and MOI of the following:	
	49.02.01	drowning and water related incidents
	49.02.02	temperature-related illness
	49.02.03	bites and envenomation
	49.02.04	dysbarism such as high-altitude injuries
	49.02.05	diving injuries
	49.02.06	lightning (electrical) injury
	49.02.07	high altitude illness
	49.02.08	radiation exposure
49.03	Describes and demonstrate the assessment and management for a patient with the following:	
	49.03.01	drowning and water related incidents
	49.03.02	temperature-related illness
	49.03.03	bites and envenomation
	49.03.04	dysbarism such as high-altitude injuries
	49.03.05	diving injuries
	49.03.06	lightning (electrical) injury
	49.03.07	high altitude illness
	49.03.08	radiation exposure
49.04	Discuss the fundamental principles of the gas laws including: Boyle's, Dalton, Henry and Charles.	
49.05	Discuss scene management and provider safety considerations for a variety of environmental emergencies.	
49.06	Explain the five ways a body can lose heat.	
49.07	Discuss potentially life threatening venomous species of insects, spiders and snakes in the U.S.	
50.0	<b>Multi-Systems Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span. – The student will be able to:	
50.01	Discuss the pathophysiology, signs and symptoms, and MOI of multi-system trauma and blast injuries.	
50.02	Describe and demonstrate assessment and management considerations for a patient of multi system trauma and blast injuries.	
51.0	<b>Obstetrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT. – The student will be able to:	
51.01	Identify and describe the anatomical and the physiological changes during pregnancy.	

51.02	Define the stages of labor and discuss how to assess them.
51.03	Differentiate between cephalic and abnormal delivery.
51.04	Describe the management of a patient with pre-delivery emergencies.
51.05	Discuss and demonstrate the patient care measures for all stages of labor in a cephalic delivery for the mother and the newborn.
51.06	Describe the management of the mother post-delivery.
51.07	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
51.08	Describe the procedures for handling complications of delivery.
51.09	Describe special considerations when meconium is present in amniotic fluid or during delivery.
51.10	Identify the factors that lead to premature birth and low birth weight newborns.
51.11	Demonstrate the procedures for handling complications of pregnancy including pre-eclampsia, eclampsia, and high risk.
52.0	<b>Neonatal Care:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT. – The student will be able to:
52.01	Discuss and demonstrate assessment and management considerations of a neonate.
52.02	Define the term neonate.
52.03	Describe special patient care considerations of a premature baby.
52.04	Calculate the Apgar score given various newborn situations.
52.05	Discuss the common signs when ventilatory assistance is appropriate for a neonate.
52.06	Discuss and demonstrate the steps in resuscitation of a neonate.
52.07	Review the signs of hypovolemia in a newborn.
52.08	Discuss the effects maternal narcotic usage has on the newborn.
52.09	Discuss the management/treatment plan for vomiting in the neonate.
52.10	Discuss the assessment findings associated with common birth injuries in the neonate.
53.0	<b>Pediatrics:</b> Demonstrate a fundamental depth, fundamental breath of knowledge of management of the pediatric patient within the scope of practice of the EMT. – The student will be able to:
53.01	Review the anatomy, physiology and pathophysiology differences of patients.

53.02	Discuss the differences in approaching and assessing patients.
53.03	Discuss and demonstrate assessment and management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
53.04	Describe the selection of appropriate airway adjuncts and ventilation devices.
53.05	Discuss complications of improper utilization of airway adjuncts and ventilation devices.
53.06	Describe the common causes, assessment and management of respiratory distress, failure, or arrest.
53.07	Discuss the common causes, assessment and management of hypo-perfusion.
53.08	Discuss the common causes, assessment and management of cardiopulmonary arrest.
53.09	Describe the common causes, assessment and management of altered level of consciousness.
53.10	Describe the common causes, assessment and management of trauma.
53.11	Describe the common causes, assessment and management of neurological emergencies.
53.12	Demonstrate proper technique for administering blow-by oxygen.
53.13	Review proper technique for suctioning.
53.14	Review appropriate use of airway adjuncts and ventilation devices.
53.15	Review age appropriate basic airway clearing maneuvers for a completely obstructed airway.
54.0	<b>Geriatrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT. – The student will be able to:
54.01	Define and discuss the term geriatrics.
54.02	Review the anatomy, physiology and pathophysiology of the geriatric patient.
54.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
54.04	Discuss the importance of fall prevention with the geriatric patient.
54.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
54.06	Describe the common causes, assessment, and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.0	<b>Patients with Special Challenges:</b> Demonstrate a simple depth, simple breadth of knowledge of the management of the patient with special challenges across the life span. –The student will be able to:
55.01	Discuss the special considerations required when providing emergency care to patients with:
55.01.01	abuse/neglect of vulnerable populations

55.01.02	homelessness
55.01.03	poverty
55.01.04	bariatrics
55.01.05	tech dependent
55.01.06	hospice/terminally ill
55.01.07	tracheostomy
55.01.08	home care
55.01.09	sensory deficit/loss
55.01.10	developmental disability
55.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
55.02.01	respiratory devices
55.02.02	cardiac devices
55.02.03	gastro-urinary devices
55.02.04	central & peripheral IV catheters
55.03	Describe home care and the types of patients it serves and the services it encompasses.
55.04	Differentiate between hospice/palliative care and curative care.
55.05	Discuss the role of the EMT as a patient advocate for vulnerable populations.
56.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
56.01	Discuss the importance of performing regular vehicle and equipment inspection.
56.02	Demonstrate how to perform a daily inspection of an ambulance.
56.03	Review the general provisions of Florida laws relating to the operation of the ambulance.
56.04	Discuss the guidelines for operating an ambulance safely during emergency and non-emergency situation/incident.
56.05	Review considerations that are required for ensuring scene safety, including personal safety, patient safety, and traffic control.
56.06	Review how to clean and disinfect the ambulance and equipment.
57.0	<b>Incident Management:</b> Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
57.01	Discuss the importance of NIMS (National Incidence Management System) and its functional components.
57.02	Discuss unified command and when it is applicable.
57.03	Describe the role of command and the procedures for transfer of command.

57.04	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents:
57.04.01	safety
57.04.02	logistics
57.04.03	rehabilitation
57.04.04	staging,
57.04.05	treatment
57.04.06	triage
57.04.07	transportation
57.04.08	extrication/rescue
57.04.09	morgue
57.04.10	communications
57.05	Discuss the physical and psychological signs of critical incident stress.
58.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
58.01	Review essential elements of scene size-up when arriving at a potential MCI.
58.02	Describe the role of the rescuers and EMS systems in planning for MCIs and disasters.
58.03	Describe the role of the physician at multiple casualty incidents.
58.04	Define triage and describe the principles of triage.
58.05	Describe the START (simple triage and rapid treatment) and JUMP START method of initial triage.
58.06	Describe techniques used to allocate patients to hospitals and track them.
58.07	Discuss and describe the essential equipment to provide logistical support to MCI operations.
58.08	Describe the role of critical incident stress management during and after MCIs.
58.09	Demonstrate the use of local/regional triage tagging system.
59.0	<b>Air Medical:</b> Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response. –The student will be able to:
59.01	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
59.02	Describe the capabilities, protocols, and methods for accessing air medical transport.
59.03	Review the advantages and disadvantages of air medical transport.
59.04	Review the conditions/situations in which air medical transport should be considered.
60.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. –

The student will be able to:	
60.01	Describe the role of the EMT in patient rescue and vehicle extrication
60.02	Describe personal and patient safety during vehicle extrication.
60.03	Explain the difference between simple access and complex access in vehicle extrication.
60.04	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
60.05	Discuss the use of simple hand tools used for vehicle extrication.
60.06	Discuss and describe the hazards and safe practices associated with the following vehicle components:
60.06.01	energy absorbing bumpers
60.06.02	air bag/supplemental restraint systems
60.06.03	catalytic converters and conventional fuel systems
60.06.04	stored energy
60.06.05	hybrid-electric vehicles
60.07	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles.
60.08	Describe the electrical hazards commonly found at highway incidents (above and below ground).
60.09	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
60.10	Explain typical door anatomy and methods to gain access to the patient.
61.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
61.01	Identify and describe resources for substance identification, decontamination, and treatment information, including but not limited to the following:
61.01.01	poison control center
61.01.02	medical control
61.01.03	material safety data sheets (MSDS),
61.01.04	reference textbooks
61.01.05	computer databases
61.01.06	Computer-Aided Management of Emergency Operations (CAMEO)
61.01.07	CHEMTREC
61.01.08	technical specialists
61.01.09	Agency for toxic substances and disease registry
61.02	Explain primary and secondary contamination risk.
61.03	Review routes of exposure.



61.04	Discuss how the substance and route of contamination alters triage and decontamination methods.
61.05	Explain the common signs, symptoms, and treatment for the following substances: 61.05.01      corrosives 61.05.02      pesticides 61.05.03      chemical asphyxiants 61.05.04      hydrocarbon solvents
61.06	Identify local facilities and resources capable of treating patients exposed to hazardous materials.
61.07	Determine the appropriate level of PPE by considering the following: 61.07.01      types 61.07.02      application 61.07.03      use and limitations 61.07.04      use of chemical compatibility chart
61.08	Explain specific decontamination procedures.
61.09	Discuss the designated HAZMAT control zones (HOT, WARM, and COLD).
61.10	Discuss an emergency two-step decontamination process.
61.11	Identify DOT Labels, placards and markings that are used to designate HAZMAT materials.
61.12	Demonstrate the ability to use a variety of reference materials to identify a HAZMAT material.
62.0	<b>Mass Casualty Incidents Due to Terrorism and Disaster:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
62.01	Describe the role of the EMT on the scene of a natural or man-made disaster.
62.02	Define the different types of terrorism and provide examples of incidents of each.
62.03	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.
62.04	Discuss the National Terrorism Advisory System.
62.05	Discuss factors to consider when responding to a terrorist situation.
62.06	Review important actions to take at the scene of a terrorist event such as: 62.06.01      scene safety 62.06.02      personal protection 62.06.03      notification procedures 62.06.04      available resources 62.06.05      working with in the command system
62.07	List and describe the main categories of weapons of mass destruction.

62.08 Discuss the different types of chemical agents and their signs and symptoms.

62.09 Review the treatment and management of patients exposed to various types of chemical agents and radiation.

62.10 Review the different types of radiations and their effect on the human body.

62.11 Discuss the use of a nerve agent antidote kit.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The standard length of this program is 300 clock hours or 12 credit hours.

Once the students have successfully completed the EMT Program, they may be given a certificate stating that they have met all Emergency Medical Responder requirements.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Paramedic  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	<b>College Credit</b>	<b>Clock Hour Program</b>
Program Number	N/A	H170212
CIP Number	0351090417	0351090418
Grade Level	College Credit	30, 31
Standard Length	42 credit hours	1100 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics	29-2041 Emergency Medical Technicians and Paramedics
Basic Skills Level:	N/A	Reading: 10 Mathematics 10 Language: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

This is an instructional program that prepares students for employment as paramedics SOC 29-2041 (Emergency Medical Technicians & Paramedics) to function at the basic pre-hospital emergency medical technician - paramedic level and treat various medical/trauma conditions, using appropriate equipment and materials. The program prepares students for certification as paramedics in accordance with Chapter 64E-2 of the Florida Administrative Code.

The content includes but is not limited to: patient assessment, advanced airway management, cardiovascular emergencies, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, pharmacology, medication administration, respiratory emergencies, endocrine emergencies, acute abdomen, communicable diseases, patients with abnormal behavior,

substance abuse, the unconscious state, emergency childbirth, pediatric and geriatric emergencies, burns, environmental hazards, communications, documentation, extrication, mass casualty incident, incident command system, and transportation of patient.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour, with college credit awarded to a student upon articulation to a state college.

**Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 1 occupational completion point and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	EMS0210	Paramedic I	248 hours	29-2041
	EMS0211	Paramedic II	426 hours	
	EMS0212	Paramedic III	426 hours	

**College Credit**

When offered at the college credit level, this ATD program is part of the Emergency Medical Services (AS – 1351090402) and has a program length of 42 credits.

**Regulated Programs**

**The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT standards and benchmarks”, please refer to the EMT curriculum framework for specific objectives.**

This program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome (SUIDS) training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. This program also meets the Department of Health’s education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

A Paramedic program must be taught by faculty meeting the qualifications as set forth in 64J-1.020 F. A. C.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6.

Field internship shall include a competency-based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include supervised experience in the field setting with a certified ALS transport EMS agency or ALS fire department. Refer to 64J-1.20 for additional requirements of the field internship inside of the paramedic program.

Pursuant F.S.401.2701 to Paramedic programs must be available only to Florida-certified emergency medical technicians or an emergency medical technician applicant who will obtain Florida certification prior to completion of phase one of the paramedic program and EMT certification must be maintained through the program.

It is strongly recommended this program be accredited by Commission on Accreditation of Allied Health Education Programs (CAAHEP). Beginning January 1, 2013, National Registry for Emergency Medical Technicians (NREMT) will require students applying for Paramedic National certification to be from a CAAHEP/CoAEMSP accredited program.

The Student Performance Standards for Paramedic were adapted and condensed from the most current US Department of Transportation, National EMS Educational Standards for the Paramedic. Administrators and instructors should refer to these materials for additional detail.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems.
- 02.0 Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice.
- 03.0 Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system.
- 06.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles.
- 07.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS.
- 08.0 Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems.
- 09.0 Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals.
- 10.0 Demonstrate a complex knowledge of pathophysiology of major systems.
- 11.0 Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development.
- 12.0 Demonstrate a fundamental knowledge of the principles of public health.
- 13.0 Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology.
- 14.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic.
- 15.0 Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic.
- 16.0 Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span.
- 17.0 Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span.
- 18.0 Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilator assessment and management across the life span.
- 19.0 Demonstrate a complex depth, comprehensive breadth of knowledge of scene management.
- 20.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations.
- 21.0 Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking.
- 22.0 Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic.
- 24.0 Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 25.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints.
- 26.0 Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span.
- 27.0 Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span.
- 28.0 Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span.

- 29.0 Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious disease across the life span.
- 30.0 Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span.
- 31.0 Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span.
- 32.0 Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/ emergencies across the life span.
- 33.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span.
- 34.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 35.0 Demonstrate a complex depth, foundational breadth of knowledge of the assessment and management of hematology disorders/emergencies across the life span.
- 36.0 Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span.
- 37.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span.
- 38.0 Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 39.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose, and throat across the life span.
- 40.0 Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure.
- 41.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span.
- 42.0 Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span.
- 43.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 44.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 46.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.
- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span.
- 49.0 Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span.
- 50.0 Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span.
- 51.0 Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries.



- 52.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic.
- 53.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic.
- 54.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic.
- 55.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic.
- 56.0 Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span.
- 57.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 58.0 Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system.
- 59.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 60.0 Demonstrate a complex depth, comprehensive breadth of knowledge of air Medical transport risks, needs, and advantages.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 63.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

Florida Department of Education  
Student Performance Standards

Program Title: Paramedic - ATD  
Career Certificate Program Number: H170212

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT standards and benchmarks”, please refer to the EMT curriculum framework for specific objectives

<b>Course Number: EMS0210</b>	
<b>Occupational Completion Point: A</b>	
<b>Paramedic I – 248 hours – SOC Code 29-2041</b>	
01.0	<b>EMS Systems:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems. – The student will be able to:
01.01	Define terms, including but not limited to: EMS systems, licensure, registration, profession, professionalism, health care professional, ethics, peer review, medical direction, and protocols.
01.02	Describe the attributes of a paramedic as a health care professional.
01.03	Explain paramedic licensure/ certification, recertification, and reciprocity requirements in Florida.
01.04	Explain the importance of maintaining one’s paramedic license/certification.
01.05	Describe the benefits of paramedic continuing education.
01.06	Discuss the role of national associations and of a national certification agency.
01.07	Discuss Chapter 401, Florida Statutes, and Chapter 64-E, Florida Administrative Code.
01.08	Discuss the roles of various EMS standard setting agencies.
01.09	Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration.
01.10	Describe and demonstrate professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
01.11	Describe the role of the EMS physician in providing medical direction.
01.12	Discuss examples of local protocols.

01.13	Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
01.14	Describe the role of the paramedic relative to the safety of the crew, the patient, and bystanders.
01.15	Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders.
01.16	Advocate the need for injury prevention.
01.17	Discuss the diverse types of EMS services and differences in their provision of care.
02.0	<b>Research:</b> Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice. – The student will be able to:
02.01	Interpret results and reach conclusions.
02.02	Discuss the importance of evidenced based medicine and medical research and its role in refining EMS practices.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Discuss the concept of wellness and its benefits.
03.02	Discuss how cardiovascular endurance, muscle strength, and flexibility contribute to physical fitness.
03.03	Describe the impact of shift work on circadian rhythms.
03.04	Discuss the role of risk assessments and warning signs in cancer and cardiovascular disease.
03.05	Differentiate between proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
03.06	Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.
03.07	Describe the equipment available for self-protection when confronted with a variety of adverse situations.
03.08	Describe the three phases and factors that trigger the stress response.
03.09	Differentiate between normal/ healthy and detrimental reactions to anxiety and stress.
03.10	Identify and describe the defense mechanisms and management techniques and resources commonly used to deal with stress.
03.11	Describe the components of critical incident stress management (CISM).
03.12	Describe the needs of the paramedic when dealing with death and dying.
03.13	Discuss the importance of standard precautions and body substance isolation practices.
03.14	Discuss the need to treat each patient as an individual, with respect and dignity.

03.15	Discuss the need to respect the emotional needs of dying patients and their families.
03.16	Discuss the paramedics' role in performing community risk assessment.
04.0	<b>Documentation:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing. –The student will be able to:
04.01	Identify the general principles regarding the importance of EMS documentation and ways in which documents are used.
04.02	Demonstrate proper use of medical terminology.
04.03	Record pertinent administrative information to a given standard.
04.04	Analyze the documentation for accuracy and completeness, including spelling.
04.05	Describe the differences between subjective and objective elements of documentation.
04.06	Describe the potential consequences of illegible, incomplete, or inaccurate documentation.
04.07	Describe the special considerations concerning patient refusal of transport.
04.08	Explain how to properly record direct patient or bystander comments.
04.09	Describe the special considerations concerning mass casualty incident documentation.
04.10	Identify and record the pertinent, reportable clinical data of each patient interaction.
04.11	Note and record pertinent negative clinical findings.
04.12	Demonstrate proper completion of an EMS PCR (patient care record).
05.0	<b>EMS Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system. – The student will be able to:
05.01	Identify the role of verbal, written, and electronic communications in the provision of EMS.
05.02	Describe the phases of communications necessary for an emergency response and transport.
05.03	Discuss the importance of proper terminology when communicating during an emergency.
05.04	Discuss factors that impede or enhance effective verbal and written communications.
05.05	Discuss the legal implications of written communications.
05.06	Identify the components of the local EMS communications system and describe their function and use.
05.07	Identify and differentiate among the following communications systems: simplex, multiplex, duplex, trunked, digital communications, and cellular telephone.

05.08	Describe the functions and responsibilities of the Federal Communications Commission.
05.09	Describe how emergency medical dispatch (EMD) functions as an integral part of the EMS system.
05.10	List appropriate information to be gathered by the telecommunicator.
05.11	Demonstrate an organized and concise radio transmission
05.12	Demonstrate an organized and concise patient report upon transfer of care.
06.0	<b>Therapeutic Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles. –The student will be able to:
06.01	Identify internal and external factors that affect a patient/ bystander interview conducted by a paramedic.
06.02	Review the strategies for developing patient rapport.
06.03	Summarize the methods to assess mental status based on interview techniques.
06.04	Discuss the strategies for interviewing difficult patients.
06.05	Summarize developmental considerations across the life span that influence patient interviewing.
06.06	Review unique interviewing techniques necessary to employ with patients who have special needs.
06.07	Discuss interviewing considerations used by paramedics in cross-cultural communications.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS. – The student will be able to:
07.01	Differentiate between legal and ethical responsibilities.
07.02	Discuss State of Florida and Federal special reporting situations including:
07.02.01	abuse
07.02.02	sexual assault
07.02.03	gunshot and knife wounds
07.02.04	communicable disease
07.02.05	animal bites
07.03	Review terms, including but not limited to, the following: abandonment, battery, breach of duty, consent (expressed, implied, informed, voluntary), DNR orders, duty to act, emancipated minor, false imprisonment, liability, libel, negligence, proximate cause, scope of practice, slander, and tort.
07.04	Differentiate between the scope of practice and the standard of care for paramedic practice.
07.05	Discuss the concept of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the standard of care of a paramedic.
07.06	Review the four elements that must be present in order to prove negligence.

07.07	Review the legal concept and limitations of immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
07.08	Review the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
07.09	Review consent to include expressed, informed, implied, and involuntary.
07.10	Demonstrate appropriate patient management techniques in a refusal of care situation.
07.11	Discuss the issues of abandonment, negligence, false imprisonment, and battery and their implications to the paramedic.
07.12	Describe the actions that the paramedic should take to preserve evidence at a crime or accident scene.
07.13	Describe the importance of providing accurate communication (oral and written) in substantiating an incident.
07.14	Describe the criteria necessary to honor an advance directive in Florida.
08.0	<b>Anatomy and Physiology:</b> Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems. –The student will be able to:
08.01	Review the EMT standards and benchmarks for the anatomy & physiology.
08.02	Demonstrate comprehensive knowledge of anatomy and physiology as it applies to paramedic practice.
09.0	<b>Medical Terminology:</b> Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals. –The student will be able to:
09.01	Review the EMT standards and benchmarks for medical terminology.
09.02	Demonstrate a comprehensive knowledge of medical terminology as it applies to paramedic practice.
10.0	<b>Pathophysiology:</b> Demonstrate a complex knowledge of pathophysiology of major systems. – The student will be able to:
10.01	Describe the factors that precipitate disease in the human body including familial diseases and risk factors.
10.02	Describe environmental risk factors.
10.03	Define and discuss the pathogenesis, signs, and symptoms of distributive, obstructive, neurogenic, anaphylactic, and septic shock.
10.04	Discuss multiple organ dysfunction syndrome (MODS).
10.05	Describe alterations in cells and tissues including cellular adaptation, cellular injury, manifestation of cellular injury, and cellular death/necrosis.
10.06	Describe genetics and familial diseases and the role they play in pathophysiology.
10.07	Describe the self–defense mechanisms of inflammation and immune responses and their relationships to pathophysiology.
11.0	<b>Life Span Development:</b> Integrate the knowledge of the physiological, psychological, and sociological changes throughout human

development. –The student will be able to:	
11.01	Compare, contrast, and analyze the physiological and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a fundamental knowledge of principles of public health. – The student will be able to:
12.01	Review the EMT standards and benchmarks for the public health.
12.02	Apply a fundamental knowledge of the principles of public health, epidemiology, health promotion, and illness and injury prevention.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology. –The student will be able to:
13.01	Differentiate among the chemical, generic (nonproprietary), and trade (proprietary) names of a drug.
13.02	List the four main sources of drug products.
13.03	Describe how drugs are classified.
13.04	List legislative acts controlling drug use and abuse in the United States.
13.05	Differentiate among Schedule I, II, III, IV, and V substances.
13.06	Use reference materials to research medications.
13.07	Discuss standardization of drugs.
13.08	Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
13.09	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
13.10	List and describe available drug forms.
13.11	List and differentiate all methods and routes of medication administration covered in the current National EMS Scope of Practice Model.
13.12	Describe the process of:
13.12.01	pharmacokinetics
13.12.02	pharmacodynamics
13.12.03	theories of drug action
13.12.04	drug-response relationship
13.12.05	factors altering drug responses
13.12.06	predictable drug responses
13.12.07	iatrogenic drug responses
13.12.08	unpredictable adverse drug responses
13.13	Discuss the prevention, recognition and management of adverse medication reactions.

13.14	Select the optimal medication and method of medication administration for patients with a particular clinical condition or situation.
14.0	<b>Medication Administration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic. –The student will be able to:
14.01	Review the specific anatomy and physiology pertinent to medication administration.
14.02	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
14.03	Review mathematical principles and demonstrate equations necessary for performing drug calculations.
14.04	Describe the indications, contraindications, procedure, equipment and risks associated with peripheral intravenous or external jugular access.
14.05	Describe the indications, equipment needed, technique used, precautions, and general principles of intraosseous needle placement and infusion.
14.06	Describe complications that can occur as a result of IV therapy.
14.07	Review the "six rights" of drug administration and correlate these with the principles of medication administration.
14.08	Describe the use of standard precautions and body substance isolation (BSI) procedures when administering a medication.
14.09	Prepare medications for administration from a variety of types of packaging, including vials, non-constituted vials, ampules, prefilled syringes, and packaging for intravenous solutions.
14.10	Describe the role of medical direction in medication administration and describe the difference between direct orders (online) and standing orders (off-line).
14.11	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the following routes: 14.11.01      inhalation route 14.11.02      gastric tube 14.11.03      rectal route
14.12	Differentiate among the different percutaneous routes of medication administration.
14.13	Describe the purpose, equipment needed, techniques used, complications, and general principles for obtaining a blood sample.
14.14	Obtain venous and capillary blood for testing and discuss blood chemistry and normal values.
14.15	Demonstrate principles of medical asepsis in the administration of medications.
14.16	Demonstrate the procedure for disposal of contaminated items and supplies.
14.17	Demonstrate cannulation of peripheral, intravenous and/or external jugular veins.
14.18	Demonstrate intraosseous access.
14.19	Demonstrate administration of medications by the following routes: 14.19.01      oral



14.19.02	sublingual
14.19.03	buccal
14.19.04	auto-injector
14.19.05	inhalation route
14.19.06	intranasal route
14.19.07	subcutaneous route
14.19.08	intramuscular route
14.19.09	intravenous route
14.19.10	intraosseous route
<b>15.0</b>	<b>Emergency Medications:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic. – The student will be able to:
15.01	Discuss medications used by the paramedic, including indications, contraindications, dosages, adverse reactions, side effects, and interactions for the following:
15.01.01	airway management
15.01.02	respiratory
15.01.03	cardiovascular
15.01.04	neurologic conditions
15.01.05	gastrointestinal
15.01.06	miscellaneous medications
<b>16.0</b>	<b>Airway Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span. –The student will be able to:
16.01	Explain the primary objective of airway maintenance.
16.02	Explain the differences in airway anatomy.
16.03	Define, identify and describe a tracheostomy, laryngectomy, stoma, and tracheostomy tube.
16.04	Describe the special considerations in airway management and ventilation for the pediatric patient.
16.05	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade.
16.06	Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.
16.07	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation.
16.08	Describe the indications, contraindications, advantages, disadvantages and complications for performing cricothyrotomy.
16.09	Demonstrate the procedure for percutaneous cricothyrotomy.
16.10	Review the function of the structures located in the upper and lower airway.
16.11	Demonstrate effective techniques of advanced airway management of the following:
16.11.01	orotracheal,

	16.11.02	nasotracheal,
	16.11.03	subglottic,
	16.11.04	supraglottic,
	79.22.05	digital intubation
	16.12	Describe and demonstrate methods of assessment for confirming correct placement of any airway device.
	16.13	Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation.
17.0	<b>Respiration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span. –The student will be able to:	
	17.01	List the concentration of gases that comprise atmospheric air.
	17.02	Describe the measurement of oxygen in the blood.
	17.03	Describe the measurement of carbon dioxide in the blood.
	17.04	Describe peak expiratory flow.
	17.05	Describe factors that cause decreased oxygen concentrations in the blood.
	17.06	Describe the factors that increase and decrease carbon dioxide production in the body.
	17.07	Define pulsus paradoxus.
	17.08	Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
	17.09	Review the physiology of ventilation and respiration.
18.0	<b>Ventilation:</b> Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilatory assessment and management across the life span. –The student will be able to:	
	18.01	Perform and interpret pulse oximetry and capnography.
	18.02	Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV), BIPAP/CPAP, AND PEEP devices.
19.0	<b>Scene Size-Up:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of scene management. –The student will be able to:	
	19.01	Describe common hazards found at the scene of a trauma and a medical patient.
	19.02	Discuss common mechanisms of injury/ nature of illness.
	19.03	Explain the rationale for crew members to evaluate scene safety prior to entering.
	19.04	Demonstrate the scene-size-up.

20.0	<b>Primary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations. –The student will be able to:
20.01	Summarize the elements of a general impression of the patient.
20.02	Explain the reason for performing a primary assessment.
20.03	Discuss and demonstrate methods of assessing levels of responsiveness using AVPU.
20.04	Discuss and demonstrate methods of assessing the airway across the life span.
20.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
20.06	Differentiate between a patient with adequate and inadequate breathing.
20.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
20.08	Discuss and demonstrate assessing the patient for external bleeding.
20.09	Describe and demonstrate the assessment and interruption of skin color, temperature, moisture, and capillary refill across the life span.
20.10	Explain the reasons for prioritizing a patient for care and transport.
20.11	Describe when it is appropriate to expose the patient completely.
20.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
21.0	<b>History Taking:</b> Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking. –The student will be able to:
21.01	Determine and investigate the chief complaint.
21.02	Describe the components of the patient history.
21.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
21.04	Acknowledge the feelings patients experience during assessment.
21.05	Discuss the value of obtaining a family and social history.
21.06	Describe examples of different techniques the paramedic may use to obtain information from patients, family, or bystanders during the history taking process.
22.0	<b>Secondary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span. –The student will be able to:
22.01	Review EMT standards and benchmarks for secondary assessment.
22.02	Describe the techniques of inspection, palpation, percussion, and auscultation.

22.03	Discuss the limitations of conducting a physical exam in the out-of-hospital environment.
22.04	Demonstrate the examination of the patient including all major body systems and anatomical regions.
22.05	Distinguish the importance of abnormal assessment findings in all the major body systems and anatomical regions.
22.06	Describe the evaluation of patient's perfusion status based on findings in the initial assessment.
22.07	State the reasons for performing a rapid trauma assessment.
22.08	Discuss the reason for performing a focused history and physical exam.
22.09	Discuss appropriate gender and cultural considerations regarding assessment.
22.10	Discuss medical identification devices/ systems.
23.0	<b>Monitoring Devices:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic. –The student will be able to:
23.01	Describe the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies, including but not limited to:
23.01.01	continuous ECG monitoring
23.01.02	12-Lead ECG
23.01.03	capnography (wave form)
23.01.04	co-oximetry
23.01.05	methemoglobin monitoring
23.01.06	total hemoglobin
23.01.07	basic blood chemistry
23.01.08	ultrasound
23.01.09	other devices identified at the EMT level
23.02	Demonstrate the use of the following patient monitoring technologies, including but not limited to:
23.02.01	continuous ECG monitoring
23.02.02	12-Lead ECG
23.02.03	capnography (wave form)
23.02.04	other devices identified at the EMT level

**Course Number: EMS0211**  
**Occupational Completion Point: A**  
**Paramedic II – 426 hours – SOC Code 29-2041**

24.0	<b>Reassessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations. –The student will be able to:
24.01	Describe the components of reassessment and demonstrate the skills involved.
24.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
24.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
24.04	Demonstrate reassessment of patients across the life span.
25.0	<b>Medical Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints. –The student will be able to:
25.01	Identify factors that complicate patient assessment including: <ul style="list-style-type: none"><li>25.01.01 scene safety</li><li>25.01.02 environmental factors</li><li>25.01.03 chief complaint</li><li>25.01.04 paramedic preconceptions</li><li>25.01.05 distracting injuries</li><li>25.01.06 tunnel vision</li><li>25.01.07 patient cooperation</li><li>25.01.08 paramedic attitude</li></ul>
25.02	Discuss forming a field impression and utilizing available information to determine a different diagnosis.
26.0	<b>Neurology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span. – The student will be able to:
26.01	Identify the risk factors associated with nervous system dysfunction.
26.02	Review the anatomy and physiology of the organs and structures related to nervous system.
26.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with the following neurological conditions, including but not limited to: <ul style="list-style-type: none"><li>26.03.01 coma</li><li>26.03.02 altered mental status</li><li>26.03.03 seizures</li><li>26.03.04 syncope</li><li>26.03.05 transient ischemic attack</li><li>26.03.06 stroke and intracranial hemorrhage</li><li>26.03.07 degenerative neurologic diseases</li><li>26.03.08 chronic alcoholism</li><li>26.03.09 back disorders</li></ul>

26.04	Describe and differentiate the major types of seizures.
26.05	Describe the types of stroke.
26.06	Describe the significance of the prevalence of neurologic disorders in the United States.
26.07	Discuss screen tools for assessment of stroke and large vessel occlusion.
26.08	Demonstrate the use of stroke screening tools and appropriate decision making regarding transport destination for a stroke patient.
27.0	<b>Abdominal and Gastrointestinal Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
27.01	Review the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
27.02	Differentiate between hemorrhagic and non-hemorrhagic causes of abdominal pain.
27.03	Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.
27.04	Discuss the pathophysiology, signs, and symptoms, and demonstrate the assessment, and management of patients with the following abdominal and gastrointestinal disorders, including but not limited to:
27.04.01	both upper and lower gastrointestinal bleeding
27.04.02	acute gastroenteritis.
27.04.03	colitis.
27.04.04	diverticulitis.
27.04.05	appendicitis.
27.04.06	peptic ulcer disease.
27.04.07	bowel obstruction.
27.04.08	Crohn's disease.
27.04.09	pancreatitis.
27.04.10	esophageal varices.
27.04.11	hemorrhoids.
27.04.12	cholecystitis.
27.04.13	acute hepatitis.
27.05	Identify patients at risk for gastrointestinal emergencies.
27.06	Demonstrate how to auscultate the abdomen to assess for diminished, absent or abnormal bowel sounds.
28.0	<b>Immunology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span. – The student will be able to:
28.01	Define and differentiate:
28.01.01	allergic reaction.
28.01.02	anaphylaxis
28.01.03	antigens
28.01.04	antibodies

28.01.05	anaphylactoid reaction
28.02	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
28.03	Describe the prevention of anaphylaxis and appropriate patient education.
28.04	Review the pathophysiology of allergy and anaphylaxis.
28.05	Describe the common methods of entry of allergens into the body.
28.06	Review common antigens most frequently associated with anaphylaxis.
28.07	Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis and allergic reaction.
29.0	<b>Infectious Diseases:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious disease across the life span – The student will be able to:
29.01	Review EMT standards and benchmarks for infectious disease.
29.02	Review the specific anatomy and physiology pertinent to infectious and communicable diseases.
29.03	Describe the steps of an infectious process.
29.04	Describe and differentiate infectious agents, including bacteria, viruses, fungi, protozoans, and helminths (worms).
29.05	Review characteristics of the immune system.
29.06	Perform an assessment of a patient with an infectious/communicable disease.
29.07	Effectively and safely manage a patient with an infectious/communicable disease.
29.08	Review public health principles related to infectious disease.
29.09	Review the roles of local, state, and federal agencies involved in infectious disease surveillance and outbreaks.
29.10	Describe the interactions of the agent, host, and environment as determining factors in disease transmission.
29.11	Describes the EMS professional's responsibilities as well as their rights under the Ryan White Act.
29.12	Discuss the pathophysiology, signs, symptoms, assessment, and management and risk factors of significant health concerns.
29.13	Discuss the characteristics of, and organisms associated with, febrile and afebrile respiratory disease.
29.14	Describe the EMS provider's role in patient education and preventing disease transmission.
29.15	Review the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS).

30.0	<b>Endocrine Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span. – The student will be able to:
30.01	Identify the risk factors related to disorders of the endocrine system.
30.02	Review the anatomy and physiology of organs and structures related to endocrinologic diseases.
30.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following endocrinologic emergencies:
30.03.01	hypoglycemia
30.03.02	hyperglycemia
30.03.03	diabetic ketoacidosis
30.03.04	Cushing's syndrome
30.03.05	adrenal insufficiency
30.03.06	pituitary disorders
30.03.07	thyroid disorders
31.0	<b>Psychiatric:</b> Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span. – The student will be able to:
31.01	Differentiate among behavior, psychiatric disorders, and behavioral emergencies.
31.02	Discuss the pathophysiology of common psychiatric disorders and behavioral emergencies.
31.03	Discuss the general factors that may cause an alteration in a patient's behavior.
31.04	Discuss the factors/signs or symptoms of various psychiatric emergencies to include suicide.
31.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
31.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
31.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
31.08	Describe the special considerations for the safety of the EMS provider, and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
31.09	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.10	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency and possible legal implication.
31.11	List the risk factors (including behaviors) for suicide.
32.0	<b>Cardiovascular:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/emergencies across the life span. – The student will be able to:
32.01	Describe the epidemiology, incidence, morbidity and mortality of cardiovascular disease.



32.02	Identify the risk factors of coronary artery disease.
32.03	Review the anatomy and physiology of the heart and circulatory system.
32.04	Discuss the electrophysiology of the heart.
32.05	Discuss and demonstrate ECG monitoring, 12 Lead placement, acquisition, and interpretation.
32.06	Define and give examples of positive and negative inotropes, chronotropes and dromotropes.
32.07	Identify the normal characteristics of the point of maximal impulse (PMI).
32.08	Discuss the normal and abnormal heart sounds and how they relate to hemodynamic events in the cardiac cycle.
32.09	Describe a systematic approach to the analysis and interpretation of cardiac dysrhythmias.
32.10	Describe the conditions of pulseless electrical activity.
32.11	Compare and contrast electrotherapy to include pacing.
32.12	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients following conditions including the development of a treatment plan, including but not limited to:
32.12.01	angina
32.12.02	myocardial infarction STEMI/Non-STEMI
32.12.03	congestive heart failure
32.12.04	cardiac tamponade
32.12.05	cardiogenic shock
32.12.06	hypertension and acute hypertensive states
32.12.07	cardiac arrest
32.12.08	vascular disorders
32.12.09	hypertrophic cardiomyopathies
32.12.10	infectious diseases of the heart
32.12.11	congenital abnormalities
32.13	List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.
32.14	Compare fibrinolysis from percutaneous intervention as reperfusion techniques used in patients with AMI or suspected AMI and describe the "window of opportunity" as it pertains to reperfusion of a myocardial infarction.
32.15	List the characteristics of a patient eligible for thrombolytic therapy.
32.16	Define the term acute pulmonary edema and describe its relationship to left ventricular failure.
32.17	Discuss preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.
32.18	Identify non-cardiac causes of cardiac arrest.

32.19	Discuss the components of post resuscitation care including how to determine the return of spontaneous circulation (ROSC).
32.20	Identify circumstances and situations where resuscitation efforts would not be initiated or would be terminated.
32.21	Demonstrate satisfactory performance of psychomotor skills of basic and advanced life support techniques according to the current American Heart Association guidelines or its equivalent, including:
32.21.01	cardiopulmonary resuscitation
32.21.02	defibrillation
32.21.03	synchronized cardioversion
32.21.04	transcutaneous pacing
33.0	<b>Toxicology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span. – The student will be able to:
33.01	Define and differentiate among toxicology, poisoning, and overdose.
33.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
33.02.01	food poisoning
33.02.02	carbon monoxide poisoning
33.02.03	cyanide poisoning
33.02.04	exposure to acid or alkaline substance
33.02.05	exposure to hydrocarbons
33.02.06	methanol ingestion
33.02.07	isopropanol ingestion
33.02.08	ethylene glycol ingestion
33.02.09	exposure to poisonous substances
33.02.10	drug withdrawal
33.02.11	alcoholic syndrome
33.02.12	withdrawal syndrome (including delirium tremens)
33.02.13	illicit drug use
33.02.14	Medication overdose
33.02.15	Opioid overdose
33.02.16	Organa phosphate overdose
33.03	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
33.04	Review various ways that toxins enter the body.
33.05	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
33.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
33.07	Review the following for Narcan (naloxone):
33.07.01	generic and trade names
33.07.02	medication forms
33.07.03	dose

	33.07.04	administration
	33.07.05	contraindications
34.0	<b>Respiratory:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span. – The student will be able to:	
34.01	Discuss the epidemiology, morbidity, and mortality of respiratory illness in the United States.	
34.02	Review hypoventilation and hyperventilation, and outline the conditions with which they are often associated.	
34.03	Review the anatomy, physiology and functions of the respiratory system.	
34.04	Discuss those factors that contribute to the formation of a general impression and degree of respiratory distress.	
34.05	Identify breathing patterns that are associated with respiratory distress and neurologic insults and their correlation with the signs of increased work of breathing.	
34.06	Review between normal and abnormal breath/lung sounds and its physiologic significance.	
34.07	Explain the concepts of hypoxic drive and auto-PEEP as they relate to the COPD patient.	
34.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following respiratory conditions, including but not limited to:	
	34.08.01	pulmonary infections (upper and lower airway)
	34.08.02	atelectasis
	34.08.03	anatomic or foreign body obstruction
	34.08.04	aspiration
	34.08.05	asthma
	34.08.06	emphysema
	34.08.07	chronic bronchitis
	34.08.08	spontaneous pneumothorax
	34.08.09	pleural effusion
	34.08.10	pulmonary embolism
	34.08.11	cancer
	34.08.12	toxic inhalations
	34.08.13	pulmonary edema
	34.08.14	acute respiratory distress syndrome (ARDS)
	34.08.15	pneumonia
	34.08.16	neoplasms of the lung
	34.08.17	hyperventilation syndrome
35.0	<b>Hematology:</b> Demonstrate a complex depth, foundational breadth of knowledge of the assessment, and management of hematology disorders/emergencies across the life span – The student will be able to:	
35.01	Identify the role of heredity in the risk for hematologic disorders.	
35.02	Review the anatomy and physiology of the hematopoietic system.	

35.03	Describe volume and volume-control related to the hematopoietic system.
35.04	Explain the significance of the hematocrit with respect to red cell size and number.
35.05	Explain the correlation of the RBC count, hematocrit and hemoglobin values.
35.06	Recognize medications used to decrease the risk of thrombosis.
35.07	Identify blood groups.
35.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following conditions, including but not limited to:
35.08.01	anemia
35.08.02	leukemia
35.08.03	lymphomas
35.08.04	polycythemia
35.08.05	disseminated intravascular coagulopathy
35.08.06	hemophilia
35.08.07	sickle cell disease
35.08.08	multiple myeloma
35.08.09	leukopenia/neutropenia
35.08.10	leukocytosis
35.08.11	thrombocytosis
35.08.12	thrombocytopenia
35.08.13	transfusion complications
36.0	<b>Genitourinary/Renal:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span. – The student will be able to:
36.01	Describe the epidemiology, incidence, morbidity, mortality, and risk factors of urological emergencies.
36.02	Review the anatomy and physiology of the organs and structures related to urogenital diseases.
36.03	Discuss referred pain and visceral pain as it relates to urology.
36.04	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients of the following urologic and renal conditions, including but not limited to:
36.04.01	acute renal failure
36.04.02	chronic renal failure
36.04.03	complications related to hemodialysis and peritoneal dialysis.
36.04.04	renal calculi
36.04.05	priapism
36.04.06	testicular torsion
36.04.07	urinary tract infection

36.05	Review fluids, electrolytes, and acid based disturbances.
<b>37.0</b>	<b>Gynecology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span. – The student will be able to:
37.01	Review anatomy and physiology of the female reproductive system.
37.02	Identify the normal events of the menstrual and ovarian cycle.
37.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with specific gynecological emergencies, including but not limited to:
37.03.01	infection (including pelvic inflammatory disease, Bartholin’s abscess, and vaginitis/ vulvovaginitis)
37.03.02	ovarian cyst and ruptured ovarian cyst
37.03.03	ovarian torsion
37.03.04	endometriosis
37.03.05	dysfunctional uterine bleeding
37.03.06	prolapsed uterus
37.03.07	vaginal foreign body
37.03.08	vaginal hemorrhage
37.04	Describe the importance of maintaining a patient’s modesty and privacy while still being able to obtain necessary information.
37.05	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
<b>38.0</b>	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
38.01	Review the anatomy and physiology of the musculoskeletal system
38.02	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with musculoskeletal emergencies, including but not limited to:
38.02.01	osteomyelitis and tumors
38.02.02	disc disorders, lower back pain (cauda equine syndrome, sprain, and strain.)
38.02.03	joint abnormalities
38.02.04	muscle abnormalities
38.02.05	overuse syndrome
38.02.06	soft tissue infections
<b>39.0</b>	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose and throat across the life span. – The student will be able to:
39.01	Review the anatomy and physiology of the eyes, ears, nose, and throat.
39.02	Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various eye diseases/injuries, including but not limited to:
39.02.01	burns of eye and adnexa
39.02.02	conjunctivitis
39.02.03	corneal abrasions

	39.02.04	foreign body
	39.02.05	inflammation of the eyelid
	39.02.06	glaucoma
	39.02.07	hyphemia
	39.02.08	iritis
	39.02.09	papilledema
	39.02.10	retinal detachment and defect
	39.02.11	cellulitis of orbit
39.03	Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various ear diseases/injuries including:	
	39.03.01	foreign body
	39.03.02	impacted cerumen
	39.03.03	labyrinthitis
	39.03.04	Meniere's disease
	39.03.05	otitis external and media
	39.03.06	perforated tympanic membrane
39.04	Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various nose diseases/injuries including:	
	39.04.01	epistaxis
	39.04.02	foreign body intrusion
	39.04.03	rhinitis
	39.04.04	sinusitis
39.05	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with oropharynx/throat diseases/injuries including:	
	39.05.01	dentalgia and dental abscess
	39.05.02	diseases of oral soft tissue/ Ludwig's angina
	39.05.03	foreign body intrusion
	39.05.04	epiglottitis
	39.05.05	laryngitis
	39.05.06	tracheitis
	39.05.07	oral candidiasis
	39.05.08	peritonsillar abscess
	39.05.09	pharyngitis/tonsillitis
	39.05.10	temporomandibular joint disorders
40.0	<b>Shock and Resuscitation:</b> Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure. – The student will be able to:	
40.01	Describe the epidemiology, including: premorbid and comorbid conditions and prevention strategies, for shock and hemorrhage.	
40.02	Review the anatomy and physiology of the cardiovascular and respiratory systems.	
40.03	Contrast the physiology of blood flow during normal states, peri-arrest, cardiac arrest and shock.	

40.04	Discuss and demonstrate the assessment and management of shock.
40.05	Review the management of external hemorrhage.
40.06	Discuss appropriate fluid resuscitation.
40.07	Review the following for the cardiac arrest victim: 40.07.01 epidemiology 40.07.02 pathophysiology 40.07.03 physiology of blood flow during external chest compressions 40.07.04 resuscitation success/research
40.08	Review defibrillation and cardioversion to include manual techniques, automatic and semi-automated devices.
40.09	Discuss causes, pathophysiology, signs, and symptoms and management of special arrest and peri-arrest conditions, including but not limited to: 40.09.01 electrolyte disorders 40.09.02 toxic exposures 40.09.03 drowning 40.09.04 hypothermia 40.09.05 near-Fatal Asthma 40.09.06 anaphylaxis 40.09.07 trauma 40.09.08 pregnancy 40.09.09 electrical shock and lightning strikes
40.10	Review post resuscitative care include, temperature regulation, glucose/electrolyte management.
40.11	Discuss and demonstrate the assessment and management of internal hemorrhage.
40.12	Review the stages and classifications of hemorrhage.
40.13	Review the pathophysiology and demonstrate the assessment and management of the different types of shock.
40.14	Describe the effects of decreased perfusion at the capillary level.
40.15	Relate pulse pressure changes to perfusion status.
40.16	Relate orthostatic vital sign changes to perfusion status.
40.17	Define and differentiate between compensated and decompensated shock for all types of shock.
40.18	Discuss and differentiate the physiological manifestations of shock across the life span.
41.0	<b>Trauma Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span. – The student will be able to:

41.01	Review the pathophysiology of the trauma patient.
41.02	Review the components of comprehensive trauma systems and levels of trauma centers.
41.03	Review the considerations for different transportation modes to a trauma center.
41.04	Discuss the kinematics of blunt and penetrating trauma.
41.05	Discuss and describe significant and non-significant mechanism of injury (MOI) and provide examples of each.
41.06	Discuss and demonstrate the application of State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code.
41.07	Review the National Trauma Triage Protocol of Injured Patients.
41.08	Review forming a field impression and utilizing available information to determine a differential diagnosis.
41.09	Review the need for rapid intervention transport of the trauma patient.
42.0	<b>Bleeding:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span. – The student will be able to:
42.01	Review the compensatory mechanism in hemorrhagic shock.
42.02	Review the administration of medications to assist in the maintenance of homeostasis.
42.03	Review the maintenance of tissue oxygenation in a bleeding patient.
42.04	Discuss appropriate fluid resuscitation for the patient in hemorrhagic shock.
42.05	Review the different methods/modalities of controlling bleeding.
43.0	<b>Chest Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span. – The student will be able to:
43.01	Review the anatomy and physiology of the organs and structures related to thoracic injuries.
43.02	Review the pathophysiology, signs and symptoms and mechanism of injury (MOI) of the following injuries, including but not limited to:
43.02.01	myocardial injuries
43.02.01.1	pericardial tamponade
43.02.01.2	myocardial contusion
43.02.01.3	myocardial rupture
43.02.02	vascular injury
43.02.02.1.1	aortic dissection
43.02.02.1.2	pulmonary contusion
43.02.03	hemothorax
43.02.04	pneumothorax



43.02.05	hemopneumothorax
43.02.06	cardiac Tamponade
43.02.07	commotio cordis
43.02.08	tracheobronchial disruption
43.02.09	diaphragmatic rupture and injury
43.02.10	traumatic asphyxia
43.02.11	rib fracture
43.02.12	flail segment
43.02.13	sternal fracture
43.02.14	vascular injuries
43.02.15	impaled objects
43.02.16	evisceration/shock
43.03	Discuss monitoring of chest tubes.
43.04	Demonstrate the following techniques of management for thoracic injuries: needle decompression, elective intubation, ECG monitoring, oxygenation, and ventilation
44.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span. – The student will be able to:
44.01	Review the anatomy and physiology of organs and structures related to abdominal injuries.
44.02	Describe the mechanism of injury for and types of open and closed abdominal and retroperitoneal injuries involving seat belts, penetrating, blunt and evisceration.
44.03	Describe and demonstrate the pathophysiology, signs and symptoms and the assessment and management for, including but not limited to:
44.03.01	pelvic fractures.
44.03.02	solid organ injuries
44.03.03	hollow organ injuries
44.03.04	abdominal vascular injuries
44.03.05	retroperitoneal space (kidneys)
44.03.06	genitourinary system
44.04	Review the psychological considerations associated with genitourinary injuries.
45.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:
45.01	Review the anatomy and physiology of the musculoskeletal system, include the healing process.
45.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.
45.03	Define the different types of orthopedic trauma including fracture classifications.
45.04	List the 6 “P” orthopedic injury assessment.

45.05	Discuss the following management techniques:
45.05.01	heat therapy
45.05.02	cold therapy
45.05.03	splinting
45.06	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma including medication administration (analgesics and anxiolytics).
45.07	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.
45.08	Review age-associated changes in bones.
45.09	Define luxation and subluxation.
45.10	Explain the rationale for splinting at the scene versus load and go.
45.11	Demonstrate the proper use various splinting materials and devices to include improvised and traction splints.
45.12	Discuss and demonstrate the assessment and management of compartment and crush syndrome:
45.12.01	destination decision
45.12.02	rhabdomyolysis
45.13	Discuss the pathophysiology, and demonstrate the assessment and management of a tendon injury to the knee (patellar), shoulder, and Achilles.
45.14	Discuss the proper procedure to package an amputated body part for replantation.
46.0	<b>Soft Tissue Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
46.01	Review anatomy and physiology and identify the major functions of the integumentary system.
46.02	Discuss the pathophysiology of soft tissue injuries and the healing process including:
46.02.01	inflammation
46.02.02	epithelialization
46.02.03	neovascularization
46.02.04	collagen Synthesis
46.02.05	alterations in wound healing
46.02.06	abnormal scar formation
46.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
46.04	Identify types of burn injuries including:
46.04.01	thermal burn
46.04.02	chemical burn
46.04.03	electrical burn
46.04.04	radiation burn

46.05	Describe the depth classification of burn injuries including:
46.05.01	superficial burn
46.05.02	partial-thickness burn
46.05.03	full-thickness burn
46.05.04	other depth classification
46.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines”, the “rule of palms”, and other methods.
46.07	Explain how the seriousness of a burn is related to its depth and percentage of body surface area (BSA) involved.
46.08	Review the various management techniques for hemorrhage control.
46.09	Differentiate among the types of injuries requiring the use of occlusive versus non-occlusive dressing.
46.10	Demonstrate the proper use of any Morgan□type lens for irrigation of the eye.
46.11	Demonstrate the assessment and management of specific burn injuries including:
46.11.01	thermal
46.11.02	inhalation
46.11.03	chemical
46.11.04	electrical
46.11.05	radiation
46.12	Describe the pathophysiologic complications and systemic complications of a burn injury.
46.13	Discuss comorbidities in burn patients.
46.14	Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management.
46.15	Describe the types of chemicals and their burning processes and a chemical burn injury to the eye.
46.16	Discuss appropriate fluid resuscitation for burn patients.
47.0	<b>Head, Face, Neck, and Spine:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span. – The student will be able to:
47.01	Discuss types of and potential complications of facial injuries.
47.02	Discuss pathophysiology, signs and symptoms, assessment and management, and a field impression for injuries to the following areas:
47.02.01	eye(s)
47.02.02	nose
47.02.03	throat/neck
47.02.04	face
47.02.05	mouth

47.02.06	ear(s)
47.03	Distinguish between an open and closed head injury.
47.04	Define and explain the process involved with increasing ICP.
47.05	Describe and demonstrate the assessment and general management of the head/ brain injury patient, including pharmacological and non-pharmacological treatment.
47.06	Discuss the pathophysiology, signs and symptoms, and assessment and management for a patient for each of the following conditions:
47.06.01	skull fracture
47.06.02	cerebral contusion
47.06.03	intracranial hemorrhage
47.06.04	epidural, subdural, intracerebral, and subarachnoid
47.06.05	perforated tympanic membranes
47.06.06	orbital fracture
47.06.07	mandibular fracture
47.07	Review various methods for stabilization and removal of a helmet.
48.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span. – The student will be able to:
48.01	Review the anatomy and physiology of the central nervous system, brain, spinal cord, skull and spinal column.
48.02	Discuss pathophysiology, signs and symptoms, assessment, and management of the following nervous system injury including:
48.02.01	Cauda Equine syndrome
48.02.02	peripheral nerve injuries
48.02.03	intracerebral hemorrhage
48.02.04	cranial fractures
48.02.05	brain tissue injuries
48.02.06	spinal cord injuries
48.02.07	Brown-Sequard Syndrome
48.02.08	anterior cord syndrome
48.02.09	central cord syndrome
48.02.10	spinal shock
48.03	Discuss the mechanism of injury which would result in a nervous system injury.
48.04	Review the rationale for and potential for motion restriction for the entire spine when a cervical spine injury is suspected
48.05	Discuss the research involving the management of nervous system injuries and patient management.
49.0	<b>Special Considerations in Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span. – The student will be able to:

- |          |  |
|----------|--|
| 49.01    | Integrate the assessment and management differences associated with the following special populations: |
| 49.01.01 | pregnancy  |
| 49.01.02 | pediatric  |
| 49.01.03 | geriatric  |

**Course Number: EMS0212**

**Occupational Completion Point: A**

**Paramedic III – 426 hours – SOC Code 29-2041**

**50.0 Environmental Emergencies:** Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span. – The student will be able to:

50.01 Discuss the pathophysiology, signs and symptoms, assessment and management and MOI of the following:

- |          |                                      |
|----------|--------------------------------------|
| 50.01.01 | drowning and water related incidents |
| 50.01.02 | temperature-related illness          |
| 50.01.03 | bites and envenomation               |
| 50.01.04 | diving injuries                      |
| 50.01.05 | lightning (electrical) injury        |
| 50.01.06 | high altitude illness                |

50.02 Identify environmental factors that may cause illness, exacerbate preexisting illness and complicate treatment or transport decisions.

50.03 Review several methods of temperature monitoring.

50.04 Describe the general process of thermal regulation, including substances used and wastes generated.

50.05 Define fever and discuss its pathophysiologic mechanism.

50.06 Discuss the role of fluid therapy in the treatment of temperature related emergencies.

50.07 Review the gas laws related to the pathophysiology of injury in a submersion emergency.

50.08 Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving related illnesses.

50.09 Differentiate among the various treatments and interventions for the management of diving accidents.

50.10 Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.

**51.0 Multi-Systems Trauma:** Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries. – The student will be able to:

51.01 Review the priority of care in the multisystem trauma patient.

51.02 Explain which ALS interventions should occur prior to a transport decision and during transport.

52.0	<b>Obstetrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic. – The student will be able to:
52.01	Review the anatomy and physiology of the reproductive system.
52.02	Define the stages of labor and discuss how to assess them.
52.03	Differentiate between cephalic and abnormal delivery.
52.04	Describe the management of a patient with pre-delivery emergencies.
52.05	Discuss and demonstrate the patient care for all stages of labor in a cephalic delivery for the mother and the newborn.
52.06	Describe the procedures for handling complications of delivery.
52.07	Describe the management of the mother post-delivery.
52.08	Demonstrate the procedures for handling complications of pregnancy including per-eclampsia and high risk.
52.09	Describe the management of the mother post-delivery.
52.10	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
52.11	Describe special considerations when meconium is present in amniotic fluid or during delivery.
53.0	<b>Neonatal Care:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic. – The student will be able to:
53.01	Review the term neonate.
53.02	Identify antepartum and intrapartum factors that can affect the neonate.
53.03	Discuss pulmonary perfusion and asphyxia.
53.04	Calculate the Apgar score given various neonate situations.
53.05	Review resuscitation equipment and procedures for the neonate
53.06	Determine when an orogastric tube should be inserted during positive-pressure ventilation.
53.07	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
53.07.01	apnea
53.07.02	bradycardia
53.07.03	acidosis
53.07.04	pneumothorax
53.07.05	meconium-stained
53.07.06	low blood volume

53.07.07	dysphemistic hernia
53.07.08	respiratory distress
53.07.09	respiratory depression secondary to narcotics
53.07.10	low birth weight
53.07.11	seizures
53.07.12	hypoglycemia
53.07.13	diarrhea
53.07.14	jaundice
53.07.15	fever
53.07.16	hypothermia
53.07.17	birth injuries
53.07.18	cardiac conditions
53.08	Discuss post arrest management of the neonate.
53.09	Discuss vascular access cannulation techniques for a newborn including umbilical vein/artery access.
54.0	<b>Pediatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic. – The student will be able to:
54.01	Discuss key anatomical, physiological, and developmental characteristics of infants and children and their implications.
54.02	Review and demonstrate techniques for successful assessment and treatment of infants and children.
54.03	Review airway and ventilatory considerations and procedures for pediatric patients.
54.04	Discuss the indications and methods for gastric decompression for infants and children.
54.05	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
54.05.01	altered level of consciousness
54.05.02	trauma
54.05.03	hypo-perfusion
54.05.04	respiratory distress/failure
54.05.05	cardiac dysrhythmia
54.05.06	neurological emergency
54.05.07	abuse/neglect
54.05.08	SUIDS
54.05.09	FABO
54.05.10	respiratory emergencies
54.05.11	congenital heart disease
54.05.12	hydrocephalus/VP shunts
54.06	Discuss the appropriate procedure and equipment for vascular and intraosseous access.
54.07	Review basic cardiac life support (CPR) guidelines for infants and children.

54.08	Integrate advanced life support skills with basic cardiac life support for infants and children.
54.09	Discuss the indications, dosage, route of administration and special considerations for medication administration in infants and children.
54.10	Describe Sudden Unexplained Infant Death Syndrome (SUIDS), current theories, assessment and management, and the immediate needs of the family.
54.11	Discuss the parent/caregiver responses to the death of an infant or child.
54.12	Discuss and demonstrate the use of a length-based resuscitation tape and other methods for determining equipment sizes, drug doses, and other pertinent information for a pediatric patient.
54.13	Discuss proper placement of a gastric tube in infants and children.
54.14	Review appropriate routes and techniques for medication administration.
54.15	Demonstrate appropriate parent/caregiver interviewing techniques for infant and child death situations.
55.0	<b>Geriatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic. – The student will be able to:
55.01	Review and discuss the term geriatrics
55.02	Review the anatomy, physiology, and pathophysiology of the geriatric patient.
55.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
55.04	Discuss the importance of fall prevention with the geriatric patient.
55.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
55.06	Describe the common causes, assessment and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.07	Discuss the impact of polypharmacy and medication non-compliance on patient assessment and management.
55.08	Discuss medication issues of the elderly including polypharmacy, dosing errors and increased drug sensitivity and toxicology.
56.0	<b>Patients with Special Challenges:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span. – The student will be able to:
56.01	Discuss the special considerations required when providing emergency care to patients with:
56.01.01	abuse/neglect of vulnerable populations
56.01.02	homelessness
56.01.03	poverty
56.01.04	bariatrics
56.01.05	tech dependent
56.01.06	hospice/terminally ill
56.01.07	tracheostomy



56.01.08	home care
56.01.09	sensory deficit/loss
56.01.10	developmental disability
56.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
56.02.01	respiratory devices
56.02.02	cardiac devices
56.02.03	gastro-urinary devices
56.02.04	central & peripheral IV catheters
56.03	Describe home care and the types of patients it serves and the services it encompasses.
56.04	Describe the characteristics associated with the profile of the typical abuser of:
56.04.01	domestic abuser
56.04.02	elder abuser
56.04.03	child abuser
56.05	Discuss the role of the Paramedic as a patient advocate for vulnerable populations.
56.06	Differentiate between hospice/palliative care and curative care.
56.07	Describe paraplegia/quadriplegia.
56.08	Describe the various etiologies of mental illness.
56.09	Recognize the presenting signs of the following:
56.09.01	autism spectrum
56.09.02	developmental disability
56.09.03	down's syndrome
56.10	Describe the following diseases/illnesses and identify each of their possible presenting signs, including but not limited to:
56.10.01	arthritis
56.10.02	cancer
56.10.03	cerebral palsy
56.10.04	cystic fibrosis
56.10.05	multiple sclerosis
56.10.06	muscular dystrophy
56.10.07	myasthenia gravis
56.10.08	poliomyelitis
56.10.09	spina bifida,
56.10.10	patients with a previous head injury
56.10.11	mental illness
56.11	Review hospice care, comfort care and DNR/DNAR as they relate to local practice, law and policy.
56.12	Describe the access and discuss indwelling catheters, implanted central IV ports and central line monitoring.

56.13	Describe complications of assessing each of the airway, vascular access, and GI/GU devices.
56.14	Identify and describe the failure of wound drains.
56.15	Review the rights of the terminally ill.
56.16	Demonstrate proper tracheotomy care.
56.17	Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
57.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
57.01	Review the EMT standards and benchmarks for the Principles of Safely Operating a Ground Ambulance.
58.0	<b>Incident Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
58.01	Review the EMT standards and benchmarks for Incident Management and apply a complex depth and comprehensive breadth of establishing and working within the incident management system.
59.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
59.01	Review the EMT standards and benchmarks for Multiple Casualty Incidents.
60.0	<b>Air Medical:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of air medical transport risks, needs and advantages. – The student will be able to:
60.01	Describe the advantages and disadvantages of air medical transport.
60.02	Identify appropriate reasons for the use of air medical for emergency patient transport.
60.03	Describe the risks involved with the use of air medical transport.
60.04	Demonstrate the actions needed to ensure effective and safe ground operations involving air medical response.
60.05	Demonstrate appropriate communication of information needed for safe and effective interaction between the air medical crew and ground personnel.
61.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:
61.01	Review the EMT standards and benchmarks for Vehicle Extrication.
62.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
62.01	Review the EMT standards and benchmarks for Hazardous Materials Awareness.
63.0	<b>Mass Casualty Incidents due to Terrorism and Disasters:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man- made disaster. – The student will be able to:

63.01 Review the EMT standards and benchmarks for Mass Casualty Incidents.

Florida Department of Education  
Student Performance Standards

Program Title: Paramedic - ATD  
 ATD CIP Number: 0351090417  
 SOC Code(s): 29-2041

When this program is offered at the college level, the following standards and benchmarks apply:

The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT standards and benchmarks”, please refer to the EMT curriculum framework for specific objectives.

**This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:**

01.0	<b>EMS Systems:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems. – The student will be able to:
01.01	Define terms, including but not limited to: EMS systems, licensure, registration, profession, professionalism, health care professional, ethics, peer review, medical direction, and protocols.
01.02	Describe the attributes of a paramedic as a health care professional.
01.03	Explain paramedic licensure/ certification, recertification, and reciprocity requirements in Florida.
01.04	Explain the importance of maintaining one’s paramedic license/certification.
01.05	Describe the benefits of paramedic continuing education.
01.06	Discuss the role of national associations and of a national certification agency.
01.07	Discuss Chapter 401, Florida Statutes, and Chapter 64-E, Florida Administrative Code.
01.08	Discuss the roles of various EMS standard setting agencies.
01.09	Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration.
01.10	Describe and demonstrate professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
01.11	Describe the role of the EMS physician in providing medical direction.
01.12	Discuss examples of local protocols.

01.13	Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
01.14	Describe the role of the paramedic relative to the safety of the crew, the patient, and bystanders.
01.15	Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders.
01.16	Advocate the need for injury prevention.
01.17	Discuss the diverse types of EMS services and differences in their provision of care.
02.0	<b>Research:</b> Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice. – The student will be able to:
02.01	Interpret results and reach conclusions.
02.02	Discuss the importance of evidenced based medicine and medical research and its role in refining EMS practices.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Discuss the concept of wellness and its benefits.
03.02	Discuss how cardiovascular endurance, muscle strength, and flexibility contribute to physical fitness.
03.03	Describe the impact of shift work on circadian rhythms.
03.04	Discuss the role of risk assessments and warning signs in cancer and cardiovascular disease.
03.05	Differentiate between proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
03.06	Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.
03.07	Describe the equipment available for self-protection when confronted with a variety of adverse situations.
03.08	Describe the three phases and factors that trigger the stress response.
03.09	Differentiate between normal/ healthy and detrimental reactions to anxiety and stress.
03.10	Identify and describe the defense mechanisms and management techniques and resources commonly used to deal with stress.
03.11	Describe the components of critical incident stress management (CISM).
03.12	Describe the needs of the paramedic when dealing with death and dying.
03.13	Discuss the importance of standard precautions and body substance isolation practices.
03.14	Discuss the need to treat each patient as an individual, with respect and dignity.

03.15	Discuss the need to respect the emotional needs of dying patients and their families.
03.16	Discuss the paramedics' role in performing community risk assessment.
04.0	<b>Documentation:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing. –The student will be able to:
04.01	Identify the general principles regarding the importance of EMS documentation and ways in which documents are used.
04.02	Demonstrate proper use of medical terminology.
04.03	Record pertinent administrative information to a given standard.
04.04	Analyze the documentation for accuracy and completeness, including spelling.
04.05	Describe the differences between subjective and objective elements of documentation.
04.06	Describe the potential consequences of illegible, incomplete, or inaccurate documentation.
04.07	Describe the special considerations concerning patient refusal of transport.
04.08	Explain how to properly record direct patient or bystander comments.
04.09	Describe the special considerations concerning mass casualty incident documentation.
04.10	Identify and record the pertinent, reportable clinical data of each patient interaction.
04.11	Note and record pertinent negative clinical findings.
04.12	Demonstrate proper completion of an EMS PCR (patient care record).
05.0	<b>EMS Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system. – The student will be able to:
05.01	Identify the role of verbal, written, and electronic communications in the provision of EMS.
05.02	Describe the phases of communications necessary for an emergency response and transport.
05.03	Discuss the importance of proper terminology when communicating during an emergency.
05.04	Discuss factors that impede or enhance effective verbal and written communications.
05.05	Discuss the legal implications of written communications.
05.06	Identify the components of the local EMS communications system and describe their function and use.
05.07	Identify and differentiate among the following communications systems: simplex, multiplex, duplex, trunked, digital communications, and cellular telephone.

05.08	Describe the functions and responsibilities of the Federal Communications Commission.
05.09	Describe how emergency medical dispatch (EMD) functions as an integral part of the EMS system.
05.10	List appropriate information to be gathered by the telecommunicator.
05.11	Demonstrate an organized and concise radio transmission
05.12	Demonstrate an organized and concise patient report upon transfer of care.
06.0	<b>Therapeutic Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles. –The student will be able to:
06.01	Identify internal and external factors that affect a patient/ bystander interview conducted by a paramedic.
06.02	Review the strategies for developing patient rapport.
06.03	Summarize the methods to assess mental status based on interview techniques.
06.04	Discuss the strategies for interviewing difficult patients.
06.05	Summarize developmental considerations across the life span that influence patient interviewing.
06.06	Review unique interviewing techniques necessary to employ with patients who have special needs.
06.07	Discuss interviewing considerations used by paramedics in cross-cultural communications.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS. – The student will be able to:
07.01	Differentiate between legal and ethical responsibilities.
07.02	Discuss State of Florida and Federal special reporting situations including: 07.02.01 abuse 07.02.02 sexual assault 07.02.03 gunshot and knife wounds 07.02.04 communicable disease 70.01.05 animal bites
07.03	Review terms, including but not limited to, the following: abandonment, battery, breach of duty, consent (expressed, implied, informed, voluntary), DNR orders, duty to act, emancipated minor, false imprisonment, liability, libel, negligence, proximate cause, scope of practice, slander, and tort.
07.04	Differentiate between the scope of practice and the standard of care for paramedic practice.
07.05	Discuss the concept of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the standard of care of a paramedic.
07.06	Review the four elements that must be present in order to prove negligence.

07.07	Review the legal concept and limitations of immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
07.08	Review the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
07.09	Review consent to include expressed, informed, implied, and involuntary.
07.10	Demonstrate appropriate patient management techniques in a refusal of care situation.
07.11	Discuss the issues of abandonment, negligence, false imprisonment, and battery and their implications to the paramedic.
07.12	Describe the actions that the paramedic should take to preserve evidence at a crime or accident scene.
07.13	Describe the importance of providing accurate communication (oral and written) in substantiating an incident.
07.14	Describe the criteria necessary to honor an advance directive in Florida.
08.0	<b>Anatomy and Physiology:</b> Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems. –The student will be able to:
08.01	Review the EMT standards and benchmarks for the anatomy & physiology.
08.02	Demonstrate comprehensive knowledge of anatomy and physiology as it applies to paramedic practice.
09.0	<b>Medical Terminology:</b> Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals. –The student will be able to:
09.01	Review the EMT standards and benchmarks for medical terminology.
09.02	Demonstrate a comprehensive knowledge of medical terminology as it applies to paramedic practice.
10.0	<b>Pathophysiology:</b> Demonstrate a complex knowledge of pathophysiology of major systems. – The student will be able to:
10.01	Describe the factors that precipitate disease in the human body including familial diseases and risk factors.
10.02	Describe environmental risk factors.
10.03	Define and discuss the pathogenesis, signs, and symptoms of distributive, obstructive, neurogenic, anaphylactic, and septic shock.
10.04	Discuss multiple organ dysfunction syndrome (MODS).
10.05	Describe alterations in cells and tissues including cellular adaptation, cellular injury, manifestation of cellular injury, and cellular death/necrosis.
10.06	Describe genetics and familial diseases and the role they play in pathophysiology.
10.07	Describe the self–defense mechanisms of inflammation and immune responses and their relationships to pathophysiology.



11.0	<b>Life Span Development:</b> Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development. –The student will be able to:
11.01	Compare, contrast, and analyze the physiological and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a fundamental knowledge of principles of public health. – The student will be able to:
12.01	Review the EMT standards and benchmarks for the public health.
12.02	Apply a fundamental knowledge of the principles of public health, epidemiology, health promotion, and illness and injury prevention.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology. –The student will be able to:
13.01	Differentiate among the chemical, generic (nonproprietary), and trade (proprietary) names of a drug.
13.02	List the four main sources of drug products.
13.03	Describe how drugs are classified.
13.04	List legislative acts controlling drug use and abuse in the United States.
13.05	Differentiate among Schedule I, II, III, IV, and V substances.
13.06	Use reference materials to research medications.
13.07	Discuss standardization of drugs.
13.08	Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
13.09	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
13.10	List and describe available drug forms.
13.11	List and differentiate all methods and routes of medication administration covered in the current National EMS Scope of Practice Model.
13.12	Describe the process of: <ul style="list-style-type: none"> <li>13.12.01 pharmacokinetics</li> <li>13.12.02 pharmacodynamics</li> <li>13.12.03 theories of drug action</li> <li>13.12.04 drug-response relationship</li> <li>13.12.05 factors altering drug responses</li> <li>13.12.06 predictable drug responses</li> <li>13.12.07 iatrogenic drug responses</li> <li>13.12.08 unpredictable adverse drug responses</li> </ul>
13.13	Discuss the prevention, recognition and management of adverse medication reactions.

13.14	Select the optimal medication and method of medication administration for patients with a particular clinical condition or situation.
14.0	<b>Medication Administration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic. –The student will be able to:
14.01	Review the specific anatomy and physiology pertinent to medication administration.
14.02	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
14.03	Review mathematical principles and demonstrate equations necessary for performing drug calculations.
14.04	Describe the indications, contraindications, procedure, equipment and risks associated with peripheral intravenous or external jugular access.
14.05	Describe the indications, equipment needed, technique used, precautions, and general principles of intraosseous needle placement and infusion.
14.06	Describe complications that can occur as a result of IV therapy.
14.07	Review the "six rights" of drug administration and correlate these with the principles of medication administration.
14.08	Describe the use of standard precautions and body substance isolation (BSI) procedures when administering a medication.
14.09	Prepare medications for administration from a variety of types of packaging, including vials, non-constituted vials, ampules, prefilled syringes, and packaging for intravenous solutions.
14.10	Describe the role of medical direction in medication administration and describe the difference between direct orders (online) and standing orders (off-line).
14.11	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the following routes: 14.11.01      inhalation route 14.11.02      gastric tube 14.11.03      rectal route
14.12	Differentiate among the different percutaneous routes of medication administration.
14.13	Describe the purpose, equipment needed, techniques used, complications, and general principles for obtaining a blood sample.
14.14	Obtain venous and capillary blood for testing and discuss blood chemistry and normal values.
14.15	Demonstrate principles of medical asepsis in the administration of medications.
14.16	Demonstrate the procedure for disposal of contaminated items and supplies.
14.17	Demonstrate cannulation of peripheral, intravenous and/or external jugular veins.
14.18	Demonstrate intraosseous access.

14.19	Demonstrate administration of medications by the following routes:
14.19.01	oral
14.19.02	sublingual
14.19.03	buccal
14.19.04	auto-injector
14.19.05	inhalation route
14.19.06	intranasal route
14.19.07	subcutaneous route
14.19.08	intramuscular route
14.19.09	intravenous route
14.19.10	intraosseous route
15.0	<b>Emergency Medications:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic. – The student will be able to:
15.01	Discuss medications used by the paramedic, including indications, contraindications, dosages, adverse reactions, side effects, and interactions for the following:
15.01.01	airway management
15.01.02	respiratory
15.01.03	cardiovascular
15.01.04	neurologic conditions
15.01.05	gastrointestinal
15.01.06	miscellaneous medications
16.0	<b>Airway Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span. –The student will be able to:
16.01	Explain the primary objective of airway maintenance.
16.02	Explain the differences in airway anatomy.
16.03	Define, identify and describe a tracheostomy, laryngectomy, stoma, and tracheostomy tube.
16.04	Describe the special considerations in airway management and ventilation for the pediatric patient.
16.05	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade.
16.06	Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.
16.07	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation.
16.08	Describe the indications, contraindications, advantages, disadvantages and complications for performing cricothyrotomy.
16.09	Demonstrate the procedure for percutaneous cricothyrotomy.
16.10	Review the function of the structures located in the upper and lower airway.

16.11	Demonstrate effective techniques of advanced airway management of the following:
16.11.01	orotracheal,
16.11.02	nasotracheal,
16.11.03	subglottic,
16.11.04	supraglottic,
79.22.05	digital intubation
16.12	Describe and demonstrate methods of assessment for confirming correct placement of any airway device.
16.13	Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation.
17.0	<b>Respiration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span. –The student will be able to:
17.01	List the concentration of gases that comprise atmospheric air.
17.02	Describe the measurement of oxygen in the blood.
17.03	Describe the measurement of carbon dioxide in the blood.
17.04	Describe peak expiratory flow.
17.05	Describe factors that cause decreased oxygen concentrations in the blood.
17.06	Describe the factors that increase and decrease carbon dioxide production in the body.
17.07	Define pulsus paradoxus.
17.08	Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
17.09	Review the physiology of ventilation and respiration.
18.0	<b>Ventilation:</b> Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilatory assessment and management across the life span. –The student will be able to:
18.01	Perform and interpret pulse oximetry and capnography.
18.02	Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV), BIPAP/CPAP, AND PEEP devices.
19.0	<b>Scene Size-Up:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of scene management. –The student will be able to:
19.01	Describe common hazards found at the scene of a trauma and a medical patient.
19.02	Discuss common mechanisms of injury/ nature of illness.
19.03	Explain the rationale for crew members to evaluate scene safety prior to entering.

19.04	Demonstrate the scene-size-up.
20.0	<b>Primary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations. –The student will be able to:
20.01	Summarize the elements of a general impression of the patient.
20.02	Explain the reason for performing a primary assessment.
20.03	Discuss and demonstrate methods of assessing levels of responsiveness using AVPU.
20.04	Discuss and demonstrate methods of assessing the airway across the life span.
20.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
20.06	Differentiate between a patient with adequate and inadequate breathing.
20.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
20.08	Discuss and demonstrate assessing the patient for external bleeding.
20.09	Describe and demonstrate the assessment and interruption of skin color, temperature, moisture, and capillary refill across the life span.
20.10	Explain the reasons for prioritizing a patient for care and transport.
20.11	Describe when it is appropriate to expose the patient completely.
20.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
21.0	<b>History Taking:</b> Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking. –The student will be able to:
21.01	Determine and investigate the chief complaint.
21.02	Describe the components of the patient history.
21.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
21.04	Acknowledge the feelings patients experience during assessment.
21.05	Discuss the value of obtaining a family and social history.
21.06	Describe examples of different techniques the paramedic may use to obtain information from patients, family, or bystanders during the history taking process.
22.0	<b>Secondary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span. –The student will be able to:
22.01	Review EMT standards and benchmarks for secondary assessment.

22.02	Describe the techniques of inspection, palpation, percussion, and auscultation.
22.03	Discuss the limitations of conducting a physical exam in the out-of-hospital environment.
22.04	Demonstrate the examination of the patient including all major body systems and anatomical regions.
22.05	Distinguish the importance of abnormal assessment findings in all the major body systems and anatomical regions.
22.06	Describe the evaluation of patient's perfusion status based on findings in the initial assessment.
22.07	State the reasons for performing a rapid trauma assessment.
22.08	Discuss the reason for performing a focused history and physical exam.
22.09	Discuss appropriate gender and cultural considerations regarding assessment.
22.10	Discuss medical identification devices/ systems.
23.0	<b>Monitoring Devices:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic. –The student will be able to:
23.01	Describe the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies, including but not limited to:
23.01.01	continuous ECG monitoring
23.01.02	12-Lead ECG
23.01.03	capnography (wave form)
23.01.04	co-oximetry
23.01.05	methemoglobin monitoring
23.01.06	total hemoglobin
23.01.07	basic blood chemistry
23.01.08	ultrasound
23.01.09	other devices identified at the EMT level
23.02	Demonstrate the use of the following patient monitoring technologies, including but not limited to:
23.02.01	continuous ECG monitoring
23.02.02	12-Lead ECG
23.02.03	capnography (wave form)
23.02.04	other devices identified at the EMT level
24.0	<b>Reassessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations. –The student will be able to:
24.01	Describe the components of reassessment and demonstrate the skills involved.
24.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
24.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.

24.04	Demonstrate reassessment of patients across the life span.
25.0	<b>Medical Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints. –The student will be able to:
25.01	Identify factors that complicate patient assessment including:
25.01.01	scene safety
25.01.02	environmental factors
25.01.03	chief complaint
25.01.04	paramedic preconceptions
25.01.05	distracting injuries
25.01.06	tunnel vision
25.01.07	patient cooperation
25.01.08	paramedic attitude
25.02	Discuss forming a field impression and utilizing available information to determine a different diagnosis.
26.0	<b>Neurology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span. – The student will be able to:
26.01	Identify the risk factors associated with nervous system dysfunction.
26.02	Review the anatomy and physiology of the organs and structures related to nervous system.
26.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with the following neurological conditions, including but not limited to:
26.03.01	coma
26.03.02	altered mental status
26.03.03	seizures
26.03.04	syncope
26.03.05	transient ischemic attack
26.03.06	stroke and intracranial hemorrhage
26.03.07	degenerative neurologic diseases
26.03.08	chronic alcoholism
26.03.09	back disorders
26.04	Describe and differentiate the major types of seizures.
26.05	Describe the types of stroke.
26.06	Describe the significance of the prevalence of neurologic disorders in the United States.
26.07	Discuss screen tools for assessment of stroke and large vessel occlusion.
26.08	Demonstrate the use of stroke screening tools and appropriate decision making regarding transport destination for a stroke patient.

27.0	<b>Abdominal and Gastrointestinal Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
27.01	Review the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
27.02	Differentiate between hemorrhagic and non-hemorrhagic causes of abdominal pain.
27.03	Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.
27.04	Discuss the pathophysiology, signs, and symptoms, and demonstrate the assessment, and management of patients with the following abdominal and gastrointestinal disorders, including but not limited to:
27.04.01	both upper and lower gastrointestinal bleeding
27.04.02	acute gastroenteritis.
27.04.03	colitis.
27.04.04	diverticulitis.
27.04.05	appendicitis.
27.04.06	peptic ulcer disease.
27.04.07	bowel obstruction.
27.04.08	Crohn's disease.
27.04.09	pancreatitis.
27.04.10	esophageal varices.
27.04.11	hemorrhoids.
27.04.12	cholecystitis.
27.04.13	acute hepatitis.
27.05	Identify patients at risk for gastrointestinal emergencies.
27.06	Demonstrate how to auscultate the abdomen to assess for diminished, absent or abnormal bowel sounds.
28.0	<b>Immunology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span. – The student will be able to:
28.01	Define and differentiate:
28.01.01	allergic reaction.
28.01.02	anaphylaxis
28.01.03	antigens
28.01.04	antibodies
28.01.05	anaphylactoid reaction
28.02	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
28.03	Describe the prevention of anaphylaxis and appropriate patient education.
28.04	Review the pathophysiology of allergy and anaphylaxis.
28.05	Describe the common methods of entry of allergens into the body.



28.06	Review common antigens most frequently associated with anaphylaxis.
28.07	Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis and allergic reaction.
29.0	<b>Infectious Diseases:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious disease across the life span – The student will be able to:
29.01	Review EMT standards and benchmarks for infectious disease.
29.02	Review the specific anatomy and physiology pertinent to infectious and communicable diseases.
29.03	Describe the steps of an infectious process.
29.04	Describe and differentiate infectious agents, including bacteria, viruses, fungi, protozoans, and helminths (worms).
29.05	Review characteristics of the immune system.
29.06	Perform an assessment of a patient with an infectious/communicable disease.
29.07	Effectively and safely manage a patient with an infectious/communicable disease.
29.08	Review public health principles related to infectious disease.
29.09	Review the roles of local, state, and federal agencies involved in infectious disease surveillance and outbreaks.
29.10	Describe the interactions of the agent, host, and environment as determining factors in disease transmission.
29.11	Describes the EMS professional's responsibilities as well as their rights under the Ryan White Act.
29.12	Discuss the pathophysiology, signs, symptoms, assessment, and management and risk factors of significant health concerns.
29.13	Discuss the characteristics of, and organisms associated with, febrile and afebrile respiratory disease.
29.14	Describe the EMS provider's role in patient education and preventing disease transmission.
29.15	Review the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS).
30.0	<b>Endocrine Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span. – The student will be able to:
30.01	Identify the risk factors related to disorders of the endocrine system.
30.02	Review the anatomy and physiology of organs and structures related to endocrinologic diseases.

30.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following endocrinologic emergencies:
30.03.01	hypoglycemia
30.03.02	hyperglycemia
30.03.03	diabetic ketoacidosis
30.03.04	Cushing's syndrome
30.03.05	adrenal insufficiency
30.03.06	pituitary disorders
30.03.07	thyroid disorders
31.0	<b>Psychiatric:</b> Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span. – The student will be able to:
31.01	Differentiate among behavior, psychiatric disorders, and behavioral emergencies.
31.02	Discuss the pathophysiology of common psychiatric disorders and behavioral emergencies.
31.03	Discuss the general factors that may cause an alteration in a patient's behavior.
31.04	Discuss the factors/signs or symptoms of various psychiatric emergencies to include suicide.
31.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
31.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
31.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
31.08	Describe the special considerations for the safety of the EMS provider, and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
31.09	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.10	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency and possible legal implication.
31.11	List the risk factors (including behaviors) for suicide.
32.0	<b>Cardiovascular:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/emergencies across the life span. – The student will be able to:
32.01	Describe the epidemiology, incidence, morbidity and mortality of cardiovascular disease.
32.02	Identify the risk factors of coronary artery disease.
32.03	Review the anatomy and physiology of the heart and circulatory system.
32.04	Discuss the electrophysiology of the heart.
32.05	Discuss and demonstrate ECG monitoring, 12 Lead placement, acquisition, and interpretation.

32.06	Define and give examples of positive and negative inotropes, chronotropes and dromotropes.
32.07	Identify the normal characteristics of the point of maximal impulse (PMI).
32.08	Discuss the normal and abnormal heart sounds and how they relate to hemodynamic events in the cardiac cycle.
32.09	Describe a systematic approach to the analysis and interpretation of cardiac dysrhythmias.
32.10	Describe the conditions of pulseless electrical activity.
32.11	Compare and contrast electrotherapy to include pacing.
32.12	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients following conditions including the development of a treatment plan, including but not limited to:
32.12.01	angina
32.12.02	myocardial infarction STEMI/Non-STEMI
32.12.03	congestive heart failure
32.12.04	cardiac tamponade
32.12.05	cardiogenic shock
32.12.06	hypertension and acute hypertensive states
32.12.07	cardiac arrest
32.12.08	vascular disorders
32.12.09	hypertrophic cardiomyopathies
32.12.10	infectious diseases of the heart
32.12.11	congenital abnormalities
32.13	List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.
32.14	Compare fibrinolysis from percutaneous intervention as reperfusion techniques used in patients with AMI or suspected AMI and describe the "window of opportunity" as it pertains to reperfusion of a myocardial infarction.
32.15	List the characteristics of a patient eligible for thrombolytic therapy.
32.16	Define the term acute pulmonary edema and describe its relationship to left ventricular failure.
32.17	Discuss preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.
32.18	Identify non-cardiac causes of cardiac arrest.
32.19	Discuss the components of post resuscitation care including how to determine the return of spontaneous circulation (ROSC).
32.20	Identify circumstances and situations where resuscitation efforts would not be initiated or would be terminated.

32.21	Demonstrate satisfactory performance of psychomotor skills of basic and advanced life support techniques according to the current American Heart Association guidelines or its equivalent, including:
32.21.01	cardiopulmonary resuscitation
32.21.02	defibrillation
32.21.03	synchronized cardioversion
32.21.04	transcutaneous pacing
33.0	<b>Toxicology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span. – The student will be able to:
33.01	Define and differentiate among toxicology, poisoning, and overdose.
33.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
33.02.01	food poisoning
33.02.02	carbon monoxide poisoning
33.02.03	cyanide poisoning
33.02.04	exposure to acid or alkaline substance
33.02.05	exposure to hydrocarbons
33.02.06	methanol ingestion
33.02.07	isopropanol ingestion
33.02.08	ethylene glycol ingestion
33.02.09	exposure to poisonous substances
33.02.10	drug withdrawal
33.02.11	alcoholic syndrome
33.02.12	withdrawal syndrome (including delirium tremens)
33.02.13	illicit drug use
33.02.14	Medication overdose
33.02.15	Opioid overdose
33.02.16	Organa phosphate overdose
33.03	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
33.04	Review various ways that toxins enter the body.
33.05	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
33.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
33.07	Review the following for Narcan (naloxone):
33.07.01	generic and trade names
33.07.02	medication forms
33.07.03	dose
33.07.04	administration
33.07.05	contraindications

34.0	<b>Respiratory:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span. – The student will be able to:
34.01	Discuss the epidemiology, morbidity, and mortality of respiratory illness in the United States.
34.02	Review hypoventilation and hyperventilation, and outline the conditions with which they are often associated.
34.03	Review the anatomy, physiology and functions of the respiratory system.
34.04	Discuss those factors that contribute to the formation of a general impression and degree of respiratory distress.
34.05	Identify breathing patterns that are associated with respiratory distress and neurologic insults and their correlation with the signs of increased work of breathing.
34.06	Review between normal and abnormal breath/lung sounds and its physiologic significance.
34.07	Explain the concepts of hypoxic drive and auto-PEEP as they relate to the COPD patient.
34.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following respiratory conditions, including but not limited to:
34.08.01	pulmonary infections (upper and lower airway)
34.08.02	atelectasis
34.08.03	anatomic or foreign body obstruction
34.08.04	aspiration
34.08.05	asthma
34.08.06	emphysema
34.08.07	chronic bronchitis
34.08.08	spontaneous pneumothorax
34.08.09	pleural effusion
34.08.10	pulmonary embolism
34.08.11	cancer
34.08.12	toxic inhalations
34.08.13	pulmonary edema
34.08.14	acute respiratory distress syndrome (ARDS)
34.08.15	pneumonia
34.08.16	neoplasms of the lung
34.08.17	hyperventilation syndrome
35.0	<b>Hematology:</b> Demonstrate a complex depth, foundational breadth of knowledge of the assessment, and management of hematology disorders/emergencies across the life span – The student will be able to:
35.01	Identify the role of heredity in the risk for hematologic disorders.
35.02	Review the anatomy and physiology of the hematopoietic system.
35.03	Describe volume and volume-control related to the hematopoietic system.

35.04	Explain the significance of the hematocrit with respect to red cell size and number.
35.05	Explain the correlation of the RBC count, hematocrit and hemoglobin values.
35.06	Recognize medications used to decrease the risk of thrombosis.
35.07	Identify blood groups.
35.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following conditions, including but not limited to:
35.08.01	anemia
35.08.02	leukemia
35.08.03	lymphomas
35.08.04	polycythemia
35.08.05	disseminated intravascular coagulopathy
35.08.06	hemophilia
35.08.07	sickle cell disease
35.08.08	multiple myeloma
35.08.09	leukopenia/neutropenia
35.08.10	leukocytosis
35.08.11	thrombocytosis
35.08.12	thrombocytopenia
35.08.13	transfusion complications
36.0	<b>Genitourinary/Renal:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span. – The student will be able to:
36.01	Describe the epidemiology, incidence, morbidity, mortality, and risk factors of urological emergencies.
36.02	Review the anatomy and physiology of the organs and structures related to urogenital diseases.
36.03	Discuss referred pain and visceral pain as it relates to urology.
36.04	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients of the following urologic and renal conditions, including but not limited to:
36.04.01	acute renal failure
36.04.02	chronic renal failure
36.04.03	complications related to hemodialysis and peritoneal dialysis.
36.04.04	renal calculi
36.04.05	priapism
36.04.06	testicular torsion
36.04.07	urinary tract infection
36.05	Review fluids, electrolytes, and acid based disturbances.

37.0	<b>Gynecology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span. – The student will be able to:
37.01	Review anatomy and physiology of the female reproductive system.
37.02	Identify the normal events of the menstrual and ovarian cycle.
37.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with specific gynecological emergencies, including but not limited to:
37.03.01	infection (including pelvic inflammatory disease, Bartholin’s abscess, and vaginitis/ vulvovaginitis)
37.03.02	ovarian cyst and ruptured ovarian cyst
37.03.03	ovarian torsion
37.03.04	endometriosis
37.03.05	dysfunctional uterine bleeding
37.03.06	prolapsed uterus
37.03.07	vaginal foreign body
37.03.08	vaginal hemorrhage
37.04	Describe the importance of maintaining a patient’s modesty and privacy while still being able to obtain necessary information.
37.05	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
38.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
38.01	Review the anatomy and physiology of the musculoskeletal system
38.02	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with musculoskeletal emergencies, including but not limited to:
38.02.01	osteomyelitis and tumors
38.02.02	disc disorders, lower back pain (cauda equine syndrome, sprain, and strain.)
38.02.03	joint abnormalities
38.02.04	muscle abnormalities
38.02.05	overuse syndrome
38.02.06	soft tissue infections
39.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose and throat across the life span. – The student will be able to:
39.01	Review the anatomy and physiology of the eyes, ears, nose, and throat.

39.02	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various eye diseases/injuries, including but not limited to:</p> <ul style="list-style-type: none"> <li>39.02.01 burns of eye and adnexa</li> <li>39.02.02 conjunctivitis</li> <li>39.02.03 corneal abrasions</li> <li>39.02.04 foreign body</li> <li>39.02.05 inflammation of the eyelid</li> <li>39.02.06 glaucoma</li> <li>39.02.07 hyphemia</li> <li>39.02.08 iritis</li> <li>39.02.09 papilledema</li> <li>39.02.10 retinal detachment and defect</li> <li>39.02.11 cellulitis of orbit</li> </ul>
39.03	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various ear diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.03.01 foreign body</li> <li>39.03.02 impacted cerumen</li> <li>39.03.03 labyrinthitis</li> <li>39.03.04 Meniere's disease</li> <li>39.03.05 otitis external and media</li> <li>39.03.06 perforated tympanic membrane</li> </ul>
39.04	<p>Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various nose diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.04.01 epistaxis</li> <li>39.04.02 foreign body intrusion</li> <li>39.04.03 rhinitis</li> <li>39.04.04 sinusitis</li> </ul>
39.05	<p>Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with oropharynx/throat diseases/injuries including:</p> <ul style="list-style-type: none"> <li>39.05.01 dentalgia and dental abscess</li> <li>39.05.02 diseases of oral soft tissue/ Ludwig's angina</li> <li>39.05.03 foreign body intrusion</li> <li>39.05.04 epiglottitis</li> <li>39.05.05 laryngitis</li> <li>39.05.06 tracheitis</li> <li>39.05.07 oral candidiasis</li> <li>39.05.08 peritonsillar abscess</li> <li>39.05.09 pharyngitis/tonsillitis</li> <li>39.05.10 temporomandibular joint disorders</li> </ul>
40.0	<p><b>Shock and Resuscitation:</b> Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure. – The student will be able to:</p>



40.01	Describe the epidemiology, including: premorbid and comorbid conditions and prevention strategies, for shock and hemorrhage.
40.02	Review the anatomy and physiology of the cardiovascular and respiratory systems.
40.03	Contrast the physiology of blood flow during normal states, peri-arrest, cardiac arrest and shock.
40.04	Discuss and demonstrate the assessment and management of shock.
40.05	Review the management of external hemorrhage.
40.06	Discuss appropriate fluid resuscitation.
40.07	Review the following for the cardiac arrest victim:
40.07.01	epidemiology
40.07.02	pathophysiology
40.07.03	physiology of blood flow during external chest compressions
40.07.04	resuscitation success/research
40.08	Review defibrillation and cardioversion to include manual techniques, automatic and semi-automated devices.
40.09	Discuss causes, pathophysiology, signs, and symptoms and management of special arrest and peri-arrest conditions, including but not limited to:
40.09.01	electrolyte disorders
40.09.02	toxic exposures
40.09.03	drowning
40.09.04	hypothermia
40.09.05	near-Fatal Asthma
40.09.06	anaphylaxis
40.09.07	trauma
40.09.08	pregnancy
40.09.09	electrical shock and lightning strikes
40.10	Review post resuscitative care include, temperature regulation, glucose/electrolyte management.
40.11	Discuss and demonstrate the assessment and management of internal hemorrhage.
40.12	Review the stages and classifications of hemorrhage.
40.13	Review the pathophysiology and demonstrate the assessment and management of the different types of shock.
40.14	Describe the effects of decreased perfusion at the capillary level.
40.15	Relate pulse pressure changes to perfusion status.
40.16	Relate orthostatic vital sign changes to perfusion status.

40.17	Define and differentiate between compensated and decompensated shock for all types of shock.
40.18	Discuss and differentiate the physiological manifestations of shock across the life span.
41.0	<b>Trauma Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span. – The student will be able to:
41.01	Review the pathophysiology of the trauma patient.
41.02	Review the components of comprehensive trauma systems and levels of trauma centers.
41.03	Review the considerations for different transportation modes to a trauma center.
41.04	Discuss the kinematics of blunt and penetrating trauma.
41.05	Discuss and describe significant and non-significant mechanism of injury (MOI) and provide examples of each.
41.06	Discuss and demonstrate the application of State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code.
41.07	Review the National Trauma Triage Protocol of Injured Patients.
41.08	Review forming a field impression and utilizing available information to determine a differential diagnosis.
41.09	Review the need for rapid intervention transport of the trauma patient.
42.0	<b>Bleeding:</b> Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span. – The student will be able to:
42.01	Review the compensatory mechanism in hemorrhagic shock.
42.02	Review the administration of medications to assist in the maintenance of homeostasis.
42.03	Review the maintenance of tissue oxygenation in a bleeding patient.
42.04	Discuss appropriate fluid resuscitation for the patient in hemorrhagic shock.
42.05	Review the different methods/modalities of controlling bleeding.
43.0	<b>Chest Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span. – The student will be able to:
43.01	Review the anatomy and physiology of the organs and structures related to thoracic injuries.

43.02	Review the pathophysiology, signs and symptoms and mechanism of injury (MOI) of the following injuries, including but not limited to:
43.02.01	myocardial injuries
43.02.01.1	pericardial tamponade
43.02.01.2	myocardial contusion
43.02.01.3	myocardial rupture
43.02.02	vascular injury
43.02.02.1.1	aortic dissection
43.02.02.1.2	pulmonary contusion
43.02.03	hemothorax
43.02.04	pneumothorax
43.02.05	hemopneumothorax
43.02.06	cardiac Tamponade
43.02.07	commotio cordis
43.02.08	tracheobronchial disruption
43.02.09	diaphragmatic rupture and injury
43.02.10	traumatic asphyxia
43.02.11	rib fracture
43.02.12	flail segment
43.02.13	sternal fracture
43.02.14	vascular injuries
43.02.15	impaled objects
43.02.16	evisceration/shock
43.03	Discuss monitoring of chest tubes.
43.04	Demonstrate the following techniques of management for thoracic injuries: needle decompression, elective intubation, ECG monitoring, oxygenation, and ventilation
44.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span. – The student will be able to:
44.01	Review the anatomy and physiology of organs and structures related to abdominal injuries.
44.02	Describe the mechanism of injury for and types of open and closed abdominal and retroperitoneal injuries involving seat belts, penetrating, blunt and evisceration.
44.03	Describe and demonstrate the pathophysiology, signs and symptoms and the assessment and management for, including but not limited to:
44.03.01	pelvic fractures.
44.03.02	solid organ injuries
44.03.03	hollow organ injuries
44.03.04	abdominal vascular injuries
44.03.05	retroperitoneal space (kidneys)
44.03.06	genitourinary system

44.04	Review the psychological considerations associated with genitourinary injuries.
45.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:
45.01	Review the anatomy and physiology of the musculoskeletal system, include the healing process.
45.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.
45.03	Define the different types of orthopedic trauma including fracture classifications.
45.04	List the 6 “P” orthopedic injury assessment.
45.05	Discuss the following management techniques: 45.05.01 heat therapy 45.05.02 cold therapy 45.05.03 splinting
45.06	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma including medication administration (analgesics and anxiolytics).
45.07	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.
45.08	Review age-associated changes in bones.
45.09	Define luxation and subluxation.
45.10	Explain the rationale for splinting at the scene versus load and go.
45.11	Demonstrate the proper use various splinting materials and devices to include improvised and traction splints.
45.12	Discuss and demonstrate the assessment and management of compartment and crush syndrome: 45.12.01 destination decision 45.12.02 rhabdomyolysis
45.13	Discuss the pathophysiology, and demonstrate the assessment and management of a tendon injury to the knee (patellar), shoulder, and Achilles.
45.14	Discuss the proper procedure to package an amputated body part for replantation.
46.0	<b>Soft Tissue Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
46.01	Review anatomy and physiology and identify the major functions of the integumentary system.

46.02	Discuss the pathophysiology of soft tissue injuries and the healing process including:
46.02.01	inflammation
46.02.02	epithelialization
46.02.03	neovascularization
46.02.04	collagen Synthesis
46.02.05	alterations in wound healing
46.02.06	abnormal scar formation
46.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
46.04	Identify types of burn injuries including:
46.04.01	thermal burn
46.04.02	chemical burn
46.04.03	electrical burn
46.04.04	radiation burn
46.05	Describe the depth classification of burn injuries including:
46.05.01	superficial burn
46.05.02	partial-thickness burn
46.05.03	full-thickness burn
46.05.04	other depth classification
46.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines”, the “rule of palms”, and other methods.
46.07	Explain how the seriousness of a burn is related to its depth and percentage of body surface area (BSA) involved.
46.08	Review the various management techniques for hemorrhage control.
46.09	Differentiate among the types of injuries requiring the use of occlusive versus non-occlusive dressing.
46.10	Demonstrate the proper use of any Morgan□type lens for irrigation of the eye.
46.11	Demonstrate the assessment and management of specific burn injuries including:
46.11.01	thermal
46.11.02	inhalation
46.11.03	chemical
46.11.04	electrical
46.11.05	radiation
46.12	Describe the pathophysiologic complications and systemic complications of a burn injury.
46.13	Discuss comorbidities in burn patients.
46.14	Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management.
46.15	Describe the types of chemicals and their burning processes and a chemical burn injury to the eye.

46.16	Discuss appropriate fluid resuscitation for burn patients.
47.0	<b>Head, Face, Neck, and Spine:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span. – The student will be able to:
47.01	Discuss types of and potential complications of facial injuries.
47.02	Discuss pathophysiology, signs and symptoms, assessment and management, and a field impression for injuries to the following areas:
47.02.01	eye(s)
47.02.02	nose
47.02.03	throat/neck
47.02.04	face
47.02.05	mouth
47.02.06	ear(s)
47.03	Distinguish between an open and closed head injury.
47.04	Define and explain the process involved with increasing ICP.
47.05	Describe and demonstrate the assessment and general management of the head/ brain injury patient, including pharmacological and non-pharmacological treatment.
47.06	Discuss the pathophysiology, signs and symptoms, and assessment and management for a patient for each of the following conditions:
47.06.01	skull fracture
47.06.02	cerebral contusion
47.06.03	intracranial hemorrhage
47.06.04	epidural, subdural, intracerebral, and subarachnoid
47.06.05	perforated tympanic membranes
47.06.06	orbital fracture
47.06.07	mandibular fracture
47.07	Review various methods for stabilization and removal of a helmet.
48.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span. – The student will be able to:
48.01	Review the anatomy and physiology of the central nervous system, brain, spinal cord, skull and spinal column.

48.02	Discuss pathophysiology, signs and symptoms, assessment, and management of the following nervous system injury including:
48.02.01	Cauda Equine syndrome
48.02.02	peripheral nerve injuries
48.02.03	intracerebral hemorrhage
48.02.04	cranial fractures
48.02.05	brain tissue injuries
48.02.06	spinal cord injuries
48.02.07	Brown-Sequard Syndrome
48.02.08	anterior cord syndrome
48.02.09	central cord syndrome
48.02.10	spinal shock
48.03	Discuss the mechanism of injury which would result in a nervous system injury.
48.04	Review the rationale for and potential for motion restriction for the entire spine when a cervical spine injury is suspected
48.05	Discuss the research involving the management of nervous system injuries and patient management.
49.0	<b>Special Considerations in Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span. – The student will be able to:
49.01	Integrate the assessment and management differences associated with the following special populations:
49.01.01	pregnancy
49.01.02	pediatric
49.01.03	geriatric
50.0	<b>Environmental Emergencies:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span. – The student will be able to:
50.01	Discuss the pathophysiology, signs and symptoms, assessment and management and MOI of the following:
50.01.01	drowning and water related incidents
50.01.02	temperature-related illness
50.01.03	bites and envenomation
50.01.04	diving injuries
50.01.05	lightning (electrical) injury
50.01.06	high altitude illness
50.02	Identify environmental factors that may cause illness, exacerbate preexisting illness and complicate treatment or transport decisions.
50.03	Review several methods of temperature monitoring.
50.04	Describe the general process of thermal regulation, including substances used and wastes generated.
50.05	Define fever and discuss its pathophysiologic mechanism.
50.06	Discuss the role of fluid therapy in the treatment of temperature related emergencies.

50.07	Review the gas laws related to the pathophysiology of injury in a submersion emergency.
50.08	Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving related illnesses.
50.09	Differentiate among the various treatments and interventions for the management of diving accidents.
50.10	Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.
51.0	<b>Multi-Systems Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries. – The student will be able to:
51.01	Review the priority of care in the multisystem trauma patient.
51.02	Explain which ALS interventions should occur prior to a transport decision and during transport.
52.0	<b>Obstetrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic. – The student will be able to:
52.01	Review the anatomy and physiology of the reproductive system.
52.02	Define the stages of labor and discuss how to assess them.
52.03	Differentiate between cephalic and abnormal delivery.
52.04	Describe the management of a patient with pre-delivery emergencies.
52.05	Discuss and demonstrate the patient care for all stages of labor in a cephalic delivery for the mother and the newborn.
52.06	Describe the procedures for handling complications of delivery.
52.07	Describe the management of the mother post-delivery.
52.08	Demonstrate the procedures for handling complications of pregnancy including per-eclampsia and high risk.
52.09	Describe the management of the mother post-delivery.
52.10	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
52.11	Describe special considerations when meconium is present in amniotic fluid or during delivery.
53.0	<b>Neonatal Care:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic. – The student will be able to:
53.01	Review the term neonate.
53.02	Identify antepartum and intrapartum factors that can affect the neonate.
53.03	Discuss pulmonary perfusion and asphyxia.



53.04	Calculate the Apgar score given various neonate situations.
53.05	Review resuscitation equipment and procedures for the neonate
53.06	Determine when an orogastric tube should be inserted during positive-pressure ventilation.
53.07	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
53.07.01	apnea
53.07.02	bradycardia
53.07.03	acidosis
53.07.04	pneumothorax
53.07.05	meconium-stained
53.07.06	low blood volume
53.07.07	dysphemistic hernia
53.07.08	respiratory distress
53.07.09	respiratory depression secondary to narcotics
53.07.10	low birth weight
53.07.11	seizures
53.07.12	hypoglycemia
53.07.13	diarrhea
53.07.14	jaundice
53.07.15	fever
53.07.16	hypothermia
53.07.17	birth injuries
53.07.18	cardiac conditions
53.08	Discuss post arrest management of the neonate.
53.09	Discuss vascular access cannulation techniques for a newborn including umbilical vein/artery access.
54.0	<b>Pediatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic. – The student will be able to:
54.01	Discuss key anatomical, physiological, and developmental characteristics of infants and children and their implications.
54.02	Review and demonstrate techniques for successful assessment and treatment of infants and children.
54.03	Review airway and ventilatory considerations and procedures for pediatric patients.
54.04	Discuss the indications and methods for gastric decompression for infants and children.

54.05	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
54.05.01	altered level of consciousness
54.05.02	trauma
54.05.03	hypo-perfusion
54.05.04	respiratory distress/failure
54.05.05	cardiac dysrhythmia
54.05.06	neurological emergency
54.05.07	abuse/neglect
54.05.08	SUIDS
54.05.09	FABO
54.05.10	respiratory emergencies
54.05.11	congenital heart disease
54.05.12	hydrocephalus/VP shunts
54.06	Discuss the appropriate procedure and equipment for vascular and intraosseous access.
54.07	Review basic cardiac life support (CPR) guidelines for infants and children.
54.08	Integrate advanced life support skills with basic cardiac life support for infants and children.
54.09	Discuss the indications, dosage, route of administration and special considerations for medication administration in infants and children.
54.10	Describe Sudden Unexplained Infant Death Syndrome (SUIDS), current theories, assessment and management, and the immediate needs of the family.
54.11	Discuss the parent/caregiver responses to the death of an infant or child.
54.12	Discuss and demonstrate the use of a length-based resuscitation tape and other methods for determining equipment sizes, drug doses, and other pertinent information for a pediatric patient.
54.13	Discuss proper placement of a gastric tube in infants and children.
54.14	Review appropriate routes and techniques for medication administration.
54.15	Demonstrate appropriate parent/caregiver interviewing techniques for infant and child death situations.
55.0	<b>Geriatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic. – The student will be able to:
55.01	Review and discuss the term geriatrics
55.02	Review the anatomy, physiology, and pathophysiology of the geriatric patient.
55.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
55.04	Discuss the importance of fall prevention with the geriatric patient.

55.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
55.06	Describe the common causes, assessment and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.07	Discuss the impact of polypharmacy and medication non-compliance on patient assessment and management.
55.08	Discuss medication issues of the elderly including polypharmacy, dosing errors and increased drug sensitivity and toxicology.
56.0	<b>Patients with Special Challenges:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span. – The student will be able to:
56.01	Discuss the special considerations required when providing emergency care to patients with:
56.01.01	abuse/neglect of vulnerable populations
56.01.02	homelessness
56.01.03	poverty
56.01.04	bariatrics
56.01.05	tech dependent
56.01.06	hospice/terminally ill
56.01.07	tracheostomy
56.01.08	home care
56.01.09	sensory deficit/loss
56.01.10	developmental disability
56.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
56.02.01	respiratory devices
56.02.02	cardiac devices
56.02.03	gastro-urinary devices
56.02.04	central & peripheral IV catheters
56.03	Describe home care and the types of patients it serves and the services it encompasses.
56.04	Describe the characteristics associated with the profile of the typical abuser of:
56.04.01	domestic abuser
56.04.02	elder abuser
56.04.03	child abuser
56.05	Discuss the role of the Paramedic as a patient advocate for vulnerable populations.
56.06	Differentiate between hospice/palliative care and curative care.
56.07	Describe paraplegia/quadriplegia.
56.08	Describe the various etiologies of mental illness.

56.09	Recognize the presenting signs of the following:
56.09.01	autism spectrum
56.09.02	developmental disability
56.09.03	down's syndrome
56.10	Describe the following diseases/illnesses and identify each of their possible presenting signs, including but not limited to:
56.10.01	arthritis
56.10.02	cancer
56.10.03	cerebral palsy
56.10.04	cystic fibrosis
56.10.05	multiple sclerosis
56.10.06	muscular dystrophy
56.10.07	myasthenia gravis
56.10.08	poliomyelitis
56.10.09	spina bifida,
56.10.10	patients with a previous head injury
56.10.11	mental illness
56.11	Review hospice care, comfort care and DNR/DNAR as they relate to local practice, law and policy.
56.12	Describe the access and discuss indwelling catheters, implanted central IV ports and central line monitoring.
56.13	Describe complications of assessing each of the airway, vascular access, and GI/GU devices.
56.14	Identify and describe the failure of wound drains.
56.15	Review the rights of the terminally ill.
56.16	Demonstrate proper tracheotomy care.
56.17	Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
57.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
57.01	Review the EMT standards and benchmarks for the Principles of Safely Operating a Ground Ambulance.
58.0	<b>Incident Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
58.01	Review the EMT standards and benchmarks for Incident Management and apply a complex depth and comprehensive breadth of establishing and working within the incident management system.
59.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
59.01	Review the EMT standards and benchmarks for Multiple Casualty Incidents.

60.0	<b>Air Medical:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of air medical transport risks, needs and advantages. – The student will be able to:
60.01	Describe the advantages and disadvantages of air medical transport.
60.02	Identify appropriate reasons for the use of air medical for emergency patient transport.
60.03	Describe the risks involved with the use of air medical transport.
60.04	Demonstrate the actions needed to ensure effective and safe ground operations involving air medical response.
60.05	Demonstrate appropriate communication of information needed for safe and effective interaction between the air medical crew and ground personnel.
61.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:
61.01	Review the EMT standards and benchmarks for Vehicle Extrication.
62.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
62.01	Review the EMT standards and benchmarks for Hazardous Materials Awareness.
63.0	<b>Mass Casualty Incidents due to Terrorism and Disasters:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
63.01	Review the EMT standards and benchmarks for Mass Casualty Incidents.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

**The Paramedic standards and benchmarks in this framework include all of the content, knowledge and skills at the EMT level in addition to the Paramedic objectives. For those standards that state “Review EMT Objectives.” Please refer to the EMT curriculum framework for specific objectives.**

The Student Performance Standards for Paramedic were adapted and condensed from the most current U S Department of Transportation, National EMS Educational Standards for the Paramedic. Administrators and instructors should refer to these materials for additional detail.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professional is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement

(Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

### **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 42 credits. When offered at a technical center the standard length of this program is 1100 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Florida Department of Education  
Curriculum Framework

**Program Title:** Nuclear Medicine Technology Specialist  
**Career Cluster:** Health Science

**CCC**

CIP Number	0351090503
Program Type	College Credit Certificate (CCC)
Program Length	48 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2033 Nuclear Medicine Technologists

**Purpose**

This certificate program is part of the Nuclear Medicine Technology AS degree program (1351090502).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as radiologic technologists, nuclear medicine or nuclear medicine technologists SOC Code 29-2033 (Nuclear Medicine Technologists) or provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to the utilization of radioactive materials for diagnostic and therapeutic procedures, patient care, administrative functions, health and safety including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.



## **Regulated Programs**

### **The program is regulated by the Department of Health, Bureau of Radiation Control.**

The program must also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible to be licensed in Florida as a Certified Radiologic Technologist - Nuclear Medicine (i.e., a Nuclear Medicine Technologist). As specified in Chapter 468, Part IV and 64E-FAC. All accredited NMT programs which are recognized and accepted by either the American Registry of Radiologic Technologists (ARRT), or the Nuclear Medicine Technology Certification Board (NMTCB), are approved by the Department of Health.

Students who complete the program will be eligible to apply to the Department of Health for the required state Nuclear Medicine Technologist license. For further information contact:

Department of Health  
MQA Radiologic Technology Program  
4052 Bald Cypress Way, Bin #C85  
Tallahassee, FL 32399  
Phone: (850) 245-4910  
Fax: (850) 921-6365

Students who complete the program will be eligible to make an application to take one or both of the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

Or

Nuclear Medicine Technology Certification Board (NMTCB)  
3558 Habersham at Northlake  
Building I  
Tucker, GA 30084  
Toll Free: (800) 659-3953

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice radiation safety.
- 13.0 Practice basic radiopharmacy.
- 14.0 Calculate doses and administer radiopharmaceuticals and interventional pharmaceuticals.
- 15.0 Perform "in vitro"/"in vivo" non-imaging procedures.
- 16.0 Perform imaging procedures.
- 17.0 Practice quality control.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Nuclear Medicine Technology Specialist  
**CIP Number:** 0351090503  
**Program Length:** 48 credit hours  
**SOC Code(s):** 29-2033

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Nuclear Medicine Technology AS degree program (1351090502). At the completion of this program, the student will be able to:**

<b>Nuclear Medicine Technology: (12-17)</b>	
12.0	Practice radiation safety. – The student will be able to:
12.01	Maintain compliance with local, state and federal regulations.
12.02	Follow appropriate protection procedures for patients, coworkers and public.
12.03	Follow approved procedures for identifying and labeling radioactive material and radiopharmaceutical doses.
12.04	Perform area surveys and wipe tests.
12.05	Dispose of radioactive wastes appropriately and in accordance with local, state and federal regulations.
12.06	Apply and interpret proper personnel monitoring of radiation exposure.
12.07	Perform decontamination procedures.
12.08	Implement appropriate accrediting/regulatory agency guidelines.
13.0	Practice basic radiopharmacy. – The student will be able to:
13.01	Maintain radiopharmaceutical laboratory records and materials.

13.02	Perform generator eluate.
13.03	Prepare radiopharmaceuticals including quality control tests.
13.04	Demonstrate understanding of ordering radiopharmaceuticals in appropriate dosage and effective time frame.
14.0	Calculate doses and administer radiopharmaceutical and interventional pharmaceuticals. – The student will be able to:
14.01	Perform dose calibrator quality control tests.
14.02	Calculate the activity and volume of dose.
14.03	Assay radiopharmaceuticals.
14.04	Properly administer dose using appropriate route.
14.05	Calculate, prepare, and administer radiopharmaceuticals and interventional pharmaceuticals.
14.06	Perform venipuncture accurately and efficiently.
14.07	Participate in the tagging of blood cells.
14.08	Maintain records of administrations/preparations.
14.09	Recognize and follow precautions and contraindications of medications including radiopharmaceuticals.
14.10	Evaluate patient history.
14.11	Evaluate patient status/needs and care for them accordingly, including treatment for adverse effects.
14.12	Document and maintain records according to facility protocol.
15.0	Perform "in vitro"/"in vivo" non-imaging procedures. – The student will be able to:
15.01	Operate laboratory equipment.
15.02	Accurately and efficiently collect specimens in accordance with facility protocol.
15.03	Operate radiation detection equipment.
15.04	Perform radioassays and calculations.
16.0	Perform imaging procedures. – The student will be able to:
16.01	Verify order, history and protocol for patient prior to proceeding.

16.02	Verify identity of patient in accordance with facility protocol.
16.03	Explain procedure and prepare patient for procedure.
16.04	Select proper acquisition parameters to obtain planar, SPECT/CT, and PET/CT images.
16.05	Appropriately perform planar, SPECT/CT, and PET/CT data processing using reconstruction techniques.
16.06	Properly prepare images to be sent to physician according to facility protocol.
16.07	Perform PACS procedures according to facility protocol.
16.08	Maintain appropriate records.
17.0	Practice quality control. – The student will be able to:
17.01	Perform scheduled quality control testing of laboratory and imaging equipment.
17.02	Operate scintillation detectors.
17.03	Operate and perform daily quality control on gas-filled detectors.
17.04	Maintain a quality assurance program according to accrediting and regulatory agencies.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program must be accredited by the:

Joint Review Committee on Educational Programs in  
Nuclear Medicine Technology (JRCNMT)  
2000 W. Danforth Rd., Ste 130 #203  
Edmond OK 73003  
Tel: (405) 285-0546  
Fax: (405) 285-0579

Or

Southern Association of Colleges and Schools (SACS)  
2520 Northwinds Parkway  
Suite 600  
Alpharetta, GA 30009  
888-41ED NOW (888-413-3669)

The nuclear medicine technologist performs patient care with understanding of patient's special needs, fears and concerns and recognizes changes in patient condition. Limiting the exposure of the patient and other health care workers to minimal levels of radiation is of paramount importance.

A fundamental knowledge and understanding of the physical and biological sciences, including radiation biology and protection, as well as radiopharmaceuticals "in vivo" and "Invitro" is essential: nuclear physics, biochemistry, immunology, physiology and an introduction to computer applications/operations with data manipulation must be included.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e., radiologic technology, etc.). Upon the successful completion of the program the student will receive a Nuclear Medicine Specialist Certificate.

Students are encouraged to become members of their appropriate professional organizations such as the Society of Nuclear Medicine – Technologist Section (SNM-TS), Florida Nuclear Medicine Technologists, Inc. (FNMT), the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Radiation Therapy Specialist  
**Career Cluster:** Health Science

**CCC**

CIP Number	0351090703
Program Type	College Credit Certificate (CCC)
Program Length	43 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-1124 Radiation Therapists

**Purpose**

This certificate program is part of the Radiation Therapy AS degree program (1351090701).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as radiation therapy technologist SOC Code 29-1124 (Radiation Therapists), or to provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to administer the prescribed radiation therapy treatments of the highest caliber, thereby providing the patient treatments of the highest quality and accuracy; to become members of the health care team that contributes to the physical and psychological comfort of the patient, to provide radiation protection to the patient, self and health care team; to work with the health care team to improve radiotherapeutic health care in the hospital and community; and to understand the importance of maintaining membership in the professional organizations and keeping abreast of the changes in the field of radiation therapy.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.



## **Regulated Programs**

### **This program is regulated by the Florida Department of Health; Bureau of Radiation Control.**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program must be accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300, or by the Southern Association of Colleges and Schools to enable graduates to become candidates for examination in Radiation Therapy Technology by the American Registry of Radiologic Technologists. It may also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a certified Radiation Therapy Technologists. As specified in Chapter 468 Part IV F.S. and 64E-3 F.A.C.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e. radiologic technology, etc.). Upon the successful completion of the program the student will receive a Radiation Therapy Specialist Certificate.

Program completers will be eligible to make application to take the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120  
(612) 687-0048

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice.
- 02.0 Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels.
- 03.0 Demonstrate proficiency in imaging and processing in radiation oncology.
- 04.0 Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels.
- 05.0 Demonstrate a functional knowledge of medical terminology required in radiation therapy.
- 06.0 Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy.
- 07.0 Demonstrate knowledge of the foundational principles and practices of radiation therapy.
- 08.0 Demonstrate knowledge of essential concepts related to pathophysiology.
- 09.0 Demonstrate knowledge of the fundamental principles of radiation therapy.
- 10.0 Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease.
- 11.0 Demonstrate the skills, procedures and knowledge required for effective quality management.
- 12.0 Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist.
- 13.0 Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting.
- 14.0 Demonstrate the principles of radiation protection and safety for the radiation therapist.
- 15.0 Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery.
- 16.0 Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics.
- 17.0 Demonstrate proficiency in research methods and information literacy.
- 18.0 Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy.
- 19.0 Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment.

Florida Department of Education  
Student Performance Standards

Program Title: Radiation Therapy Specialist  
 CIP Number: 0351090703  
 Program Length: 43 credit hours  
 SOC Code(s): 29-1124

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**This certificate program is part of the Radiation Therapy AS degree program (1351090701). At the completion of this program, the student will be able to:**

01.0	Demonstrate the proficiency in the skills and knowledge required of clinical practice. - The student will be able to:
01.01	Operate within the radiation therapy scope of practice.
01.02	Demonstrate values and attitudes congruent with the profession's standards and ethics.
01.03	Formulate priorities in daily clinical practice.
01.04	Apply concepts of teamwork.
01.05	Adapt to dynamic clinical situations.
01.06	Establish patient-centered, clinically effective service delivery strategies.
01.07	Deliver a prescribed course of treatment adhering to acceptable departmental, institutional, governmental, and professional standards.
01.08	Assess the patient's status and condition in order to deliver a prescribed course of radiation therapy.
01.09	Use critical thinking for accurate treatment delivery by demonstrating knowledge of didactic concepts.
01.10	Demonstrate the principles of radiation protection.
01.11	Monitor tumor lethal dose and normal tissue tolerance dose.
01.12	Evaluate the patient's clinical response to treatment parameters as prescribed to determine if medical intervention by the doctor is necessary.
01.13	Apply the principles of total quality management.

01.14	Detect equipment malfunctions and take appropriate action.
01.15	Construct and prepare immobilization, beam alignment and beam modification devices.
01.16	Design, evaluate and implement treatment plans.
01.17	Validate manual and computer dosimetric calculations.
01.18	Perform simulation, localization and therapeutic procedures as they pertain to radiation therapy in accordance with national patient safety standards.
01.19	Demonstrate appropriate and effective communication.
01.20	Demonstrate safe, ethical and legal practices.
01.21	Evaluate the significance of the patient's unique diagnosed cancerous pathology to formulate appropriate simulations and treatment actions.
01.22	Apply appropriate safety, transfer and immobilization principles.
01.23	Apply concepts of teaching and learning theories in design, implementation and evaluation in the education of patient, family, colleagues, and the community.
01.24	Describe departmental resources that are designed to meet the health and wellness of patient needs.
01.25	Demonstrate appropriate interaction with patients and patients' family and friends.
01.26	Assess patient side effects and complications to create an interdisciplinary management strategy that fosters prevention, healing and comfort.
01.27	Document all aspects of patient care and management in the appropriate record.
01.28	Document and communicate errors and discrepancies in accordance with institutional and national quality management procedures.
01.29	Demonstrate knowledge of situations where life support procedures would be necessary.
01.30	Document knowledge of the institution's procedures in response to emergencies, disasters and accidents.
01.31	Apply strategies that ensure professional development at a level of clinical practice consistent with acceptable standards.
01.32	Demonstrate quality assurance procedures for all treatment delivery equipment and accessories.
01.33	Evaluate outcomes to continuously improve radiation therapy services.
01.34	Incorporate Health Insurance Portability and Accountability Act (HIPAA) requirements into clinical practice.
01.35	Interpret treatment planning prior to and during a course of treatment.

02.0	Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels. - The student will be able to:
02.01	Identify theories and principles that guide ethical decision making for practice situations.
02.02	Define practice situations that carry high potential for dilemmas that require ethical scrutiny.
02.03	Discuss basic ethical duties of health care providers.
02.04	Demonstrate an awareness of and sensitivity to various cultural and ethnic differences among various client groups.
02.05	Discuss the concept of patient advocacy in support of patients' rights.
02.06	Discuss ethical theories and models.
02.07	Discuss the radiation therapy scope of practice, code of ethics and practice standards.
02.08	Examine concepts of personal honesty, integrity, accountability and professional compassion as ethical imperatives in professional practice.
02.09	Differentiate between distributive, compensatory and retributive justice.
02.10	Differentiate between provider and patient relationships.
02.11	Discuss the duty of the radiation therapist to take responsibility for actions and decisions.
02.12	Discuss the elements of an informed consent.
02.13	Discuss standards of disclosure.
02.14	Analyze issues related to the use and flow of patient information to determine confidentiality.
02.15	Explain ethical issues related to different age groups.
02.16	Identify current ethical issues in health care.
02.17	Demonstrate application of a system of examination, clarification, determination, the doctrine of informed consent and other issues related to patient rights.
02.18	Explain ethical issues related to the profession.
02.19	Discuss the relationship between ethics and health care policy.
02.20	Examine ethical issues arising daily in a radiation therapy department.
03.0	Demonstrate proficiency in imaging and processing in radiation oncology. - The student will be able to:
03.01	Define terminology associated with digital imaging systems.

03.02	Describe the various types of digital receptors.
03.03	Discuss the fundamentals of digital imaging.
03.04	Discuss image acquisition on the simulator and linear accelerator.
03.05	Describe the evaluative criteria for imaging detectors on the simulator and linear accelerator.
03.06	Describe the histogram and the process or histogram analysis as it relates to automatic rescaling and determining an exposure indicator.
03.07	Identify the exposure indices for digital imaging receptors on the simulator and linear accelerator.
03.08	Discuss the response of digital imaging systems to background and scatter radiation on the simulator and linear accelerator.
03.09	Identify appropriate measures to control scatter in the simulation and linear accelerator rooms.
03.10	Explain methods to avoid histogram analysis errors.
03.11	Describe image processing employed for digital images.
03.12	Associate the impact of image processing parameters to the image appearance.
03.13	Associate the effects of inappropriate processing on image clarity or conspicuity.
03.14	Describe and apply the fundamental physical principles of exposure for digital detectors.
03.15	Describe the selection of technical factors to ensure appropriate receptor exposure levels for digital detectors.
03.16	Describe the conditions that cause quantum mottle in a digital image.
03.17	Explain methods to avoid poor quality images in simulation and treatment planning.
03.18	Examine the potential impact of digital imaging systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
03.19	Describe picture archiving and communications system (PACS) and its function.
03.20	Identify components of a PACS system.
03.21	Describe patient benefits gained through the use of telemedicine.
03.22	Identify modality types that may be incorporated into a PACS.
03.23	Define digital imaging and communications in medicine (DICOM).
03.24	Describe data flow for a DICOM image from an imaging modality to a PACS.

03.25	Describe HIPAA concerns with electronic information.
03.26	Identify common problems associated with retrieving/viewing images.
03.27	Analyze relationships of factors affecting image contrast, density and resolution to determine optimal image quality.
03.28	Apply techniques to enhance image details and reduce image distortion.
03.29	Determine artifact types, cause and preventive measures.
03.30	Explain the basic principles of image formation for each of the following modalities: magnetic resonance (MR), ultrasound imaging, and nuclear medicine.
03.31	Describe and explain functions of the components of the computed tomography (CT) imaging system.
03.32	Differentiate between conventional and spiral/helical CT scanning.
03.33	List the CT computer data processing steps.
03.34	Name the functions of the array processor used for image reconstruction.
03.35	Explain the difference between reconstructing and reformatting an image.
03.36	Describe the application of the following terms to CT:
03.36.01	Pixel.
03.36.02	Matrix.
03.36.03	Voxel.
03.36.04	Linear attenuation coefficient.
03.36.05	CT/Hounsfield number.
03.36.06	Partial volume averaging.
03.36.07	Window width (ww) and window level (wl).
03.36.08	Spatial resolution.
03.36.09	Contrast resolution.
03.36.10	Noise.
03.36.11	Annotation.
03.36.12	Region of interest (ROI).
03.36.13	Standard vs. volumetric data acquisition.
03.37	Identify the types and appearance of artifacts most commonly affecting CT images.
03.38	Explain how artifacts can be reduced or eliminated.
03.39	Describe current data storage techniques used in CT.
03.40	Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.

04.0	Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels. - The student will be able to:
04.01	Apply concepts related to social, political, economic and historical issues to analyze the different sources of law.
04.02	List the steps in a civil legal procedure and identify the potential role of a radiation therapist.
04.03	Assess the role of effective communication skills in reducing legal action.
04.04	Analyze negligence related to clinical practice issues of simulation, treatment delivery, patient assessment, patient education and quality assurance to determine if negligence is present.
04.05	Examine the role of the radiation therapist in the informed consent process, patient rights and practice standards.
04.06	Analyze safety programs to reduce patient injury.
04.07	Examine the importance of documentation and maintenance of clinical practice records.
04.08	Formulate a risk management program.
04.09	Analyze the role of code of ethics, radiation therapy scope of practice and radiation therapy practice standards as guides to assess the appropriateness of professional actions.
04.10	Discuss the practice of lifelong learning in maintaining professional competence
05.0	Demonstrate a functional knowledge of medical terminology required in radiation therapy. - The student will be able to:
05.01	Identify primary language sources from which medical terms are derived.
05.02	Define medical terms according to basic elements.
05.03	Interpret language, abbreviations and symbols in the medical record.
06.0	Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy. - The student will be able to:
06.01	Identify CQI opportunities.
06.02	Explain the differences between CQI and QA.
06.03	Select appropriate CQI tools for specific situations.
06.04	Apply CQI principles to specific situations.
06.05	Discuss human resources' role in the work environment.
06.06	Discuss the need for organizational and departmental accreditation.
06.07	Recognize accreditation effects on radiation therapy operations.



06.08	Use appropriate current procedural terminology (CPT) codes for professional and technical charges.
06.09	Summarize the various types of insurance and the mechanisms necessary for approval of care.
06.10	Discuss reimbursement for radiation therapy services.
06.11	Compare the components and methods of developing and managing a departmental budget.
07.0	Demonstrate knowledge of the foundational principles and practices of radiation therapy. - The student will be able to:
07.01	Discuss the policies and procedures of the educational program.
07.02	Discuss the policies and procedures of clinical education settings.
07.03	Identify the responsibilities of a radiation therapy student.
07.04	Use library/Internet resources pertinent to radiation oncology.
07.05	Discuss maintaining patient and student confidentiality.
07.06	Analyze the importance of multidisciplinary care of cancer patients.
07.07	Discuss the philosophy and mission of health care delivery systems and educational programs.
07.08	Incorporate key terms used in the principles and practice of radiation therapy.
07.09	Identify the contents/sections of the patient's records.
07.10	Explain radiation safety procedures for radiation therapy.
07.11	Explain health safety procedures for personnel and patients.
07.12	Differentiate between accreditation, credentialing, certification, registration, licensure, and regulations.
07.13	Explain the purposes, functions and activities of international, national, state and local professional organizations.
07.14	Discuss the importance of professional and community commitment.
07.15	Discuss the radiation therapist scope of practice, practice standards and professional code of ethics.
07.16	Discuss the benefits of continuing education as related to improving the quality of patient care, professional development and personal enhancement.
07.17	Discuss career advancement and opportunities for the radiation therapist.
08.0	Demonstrate knowledge of essential concepts related to pathophysiology. - The student will be able to:

08.01	Describe the physiological response in inflammation and cell injury due to pathological insult.
08.02	Assess the predictive factors, including genetics, lifestyles, age and environment as they influence the development of cancer and associated diseases.
08.03	Compare the body's response to hereditary, lifestyle, age and environmental factors.
08.04	Given a specific oncologic-related disease, determine probable diagnostic, prognostic, staging, grading and the rationale for the appropriate therapeutic pathway.
08.05	Given the histology of a neoplasm, determine the tumor characteristics.
08.06	Given a common disease, anticipate the effects of the disease on the oncologic patient.
09.0	Demonstrate knowledge of the fundamental principles of radiation therapy. - The student will be able to:
09.01	Given diagnostic information about a particular cancer, determine the appropriateness of using radiation therapy as a primary treatment modality.
09.02	Determine the medical and patient information necessary to develop a radiation therapy treatment plan.
09.03	Determine the appropriate treatment energy for any given tumor type or location.
09.04	Differentiate between beam modifiers and their uses with a variety of treatment energies.
09.05	Determine the appropriate treatment setup aid, immobilization technique and beam modifier for a given treatment technique.
09.06	Identify inconsistencies between treatment prescription and treatment plan.
09.07	Develop a CT simulation plan for a particular tumor to include steps needed prior to, during and after the procedure.
09.08	Critique treatment images in relation to simulation images.
09.09	Discuss the radiation therapist scope of practice and practice standards.
10.0	Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease. - The student will be able to:
10.01	Distinguishes tumor histology to determine pathways associated with cancer and neoplastic disease.
10.02	Examine the role of surgical, radiation and medical oncology to include immunotherapy (biological therapy) and personalized medicine in the management of neoplastic disease.
10.03	Discuss multidisciplinary emerging approaches to neoplastic disease management.
10.04	Discuss the role of radiation therapy in the management of all patient populations with benign and malignant diseases.
10.05	Discuss epidemiologic and etiologic information pertinent to each neoplastic site.

10.06	Discuss the clinical presentation for each anatomic neoplastic site.
10.07	Discuss preventive methods/screening tools associated with each neoplastic site.
10.08	Explain detection, diagnosis, grading and staging systems for each neoplastic site.
10.09	Implement the principles and practice of simulation to prepare a patient for treatment.
10.10	Apply the parameters of treatment field design and arrangement used to treat neoplastic diseases.
10.11	Examine the role of radiation therapy in palliative disease management.
10.12	Identify the treatment regimens and fractionalization schemes used in palliative disease management.
10.13	Describe the role of radiation therapy in the management of oncology emergencies.
11.0	Demonstrate the skills, procedures and knowledge required for effective quality management. - The student will be able to:
11.01	Discuss the components of a quality management (QM) program in developing a culture of safety in radiation oncology.
11.02	Discuss the purpose, function and member's role on a quality management team.
11.03	Explain federal, state and institutional accreditation standards and reporting regulations for quality management.
11.04	Examine outcomes of quality management in radiation oncology.
11.05	Explain the purpose, procedures and frequency for manual and electronic treatment documentation.
11.06	Identify errors in treatment documentation.
11.07	Describe the procedure for assuring accuracy of manual and electronic records.
11.08	Examine the purpose and function of record and verify systems.
11.09	Examine the patient chart in terms of medical and legal issues.
11.10	Discuss the significance of treatment outcomes for patient care, education and research in radiation oncology.
11.11	Discuss the quality indicators to evaluate patient care areas.
11.12	Explain the purpose, procedure and frequency for all QA and QM procedures in a radiation therapy department.
11.13	Evaluate how the outcomes of QA and QM procedures impact patient care, education and research.
11.14	Examine statistical reporting available through quality assurance computerization.

11.15	Perform quality measures for computerized operation, data collection and reporting.
11.16	Determine sources of malfunction on the treatment and simulation/localization units.
11.17	Distinguish between safe and hazardous equipment operation.
11.18	Comply with acceptable quality limits for treatment operation.
11.19	Identify the source of error and determine the effect on treatment delivery, education and research.
11.20	Differentiate between quality management programs.
11.21	Discuss the importance of patient education in the quality management process.
11.22	Discuss the importance of proper patient identification and treatment field documentation.
11.23	Discuss aspects of clinical evaluation, therapeutic decision-making and informed.
11.24	Identify the key aspects of delivering a precise prescribed treatment dose.
11.25	Discuss quality control procedures and recommended tolerances for simulation equipment, megavoltage treatment units and treatment planning systems.
11.26	Discuss quality control procedures and recommended tolerances for the safe handling of brachytherapy sources and remote after loading equipment.
11.27	Defend the rationale for near miss and error report.
11.28	Critique the safety in radiation oncology.
12.0	Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist. - The student will be able to:
12.01	Integrate laws and principles of radiation biology to the clinical practice of radiation therapy.
12.02	Identify radiosensitive components of the cell.
12.03	Distinguish between units of radiation quantities and radiobiologic measures using SI units.
12.04	Differentiate between direct and indirect effects of ionizing radiation.
12.05	Explain factors affecting relative biological effectiveness (RBE).
12.06	Discuss the effects of electromagnetic and particulate radiations on cellular interactions.
12.07	Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.
12.08	Determine biologic damage due to radiation-induced chemical reactions.

12.09	Discuss radiation effects on the cell cycle.
12.10	Compare somatic and genetic effects of radiation.
12.11	Describe factors influencing radiation response of cells and tissues.
12.12	Discuss the laws of Bergonié and Tribondeau.
12.13	Interpret cell survival curves to determine radiosensitivity under numerous conditions.
12.14	Discuss the relationship of radiation quality and dose to systemic responses.
12.15	Describe radiation syndromes and factors influencing response.
12.16	Differentiate between linear, nonlinear, and threshold and non-threshold dose response curves.
12.17	Describe the 4 Rs of radiobiology.
12.18	Compare the relationship of time, dose, fractionation, volume, distance, and site to radiation effects.
12.19	Discuss the use of radiation response modifiers.
12.20	Describe the influence of chemotherapy and hyperthermia alone and in combination with radiation therapy.
13.0	Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting. - The student will be able to:
13.01	Define the fundamental units of the English, metric and Système International d'Unites (SI) systems.
13.02	Calculate various unit conversions.
13.03	Demonstrate applications of the general principles that relate to inertia, work, energy and momentum.
13.04	Describe Bohr's theory of atomic structure.
13.05	Compare the characteristics and functions of a proton, neutron and electron.
13.06	Discuss the energy levels of the atom.
13.07	Define the terms relating to atomic nomenclature.
13.08	Compare covalent bonding and ionic bonding.
13.09	Describe the process of ionization.
13.10	Differentiate between the characteristics of a mixture, substance, and element.

13.11	Classify the characteristics of an element using the periodic table.
13.12	Compare the characteristics of a molecule and compound.
13.13	Describe the nature of light.
13.14	Explain the relationship between wavelength, frequency and velocity.
13.15	Differentiate between the radiations of the electromagnetic (EM) spectrum.
13.16	Explain the relationship of energy and frequency to Planck's constant.
13.17	Distinguish between electrical charge and electrical field.
13.18	Describe the methods of electrification.
13.19	Explain the laws of electrostatics and their application.
13.20	Describe the properties and laws of magnetism.
13.21	Explain the electronic spin of an element to its potential magnetic properties.
13.22	Describe the principle of magnetic induction.
13.23	Define potential difference, current, resistance, circuit and electric power.
13.24	Compare the characteristics of direct and alternating currents.
13.25	Compare electrical measuring devices.
13.26	Discuss electrical protective devices.
13.27	Discuss the interaction between electric and magnetic fields.
13.28	Describe the characteristics and functions of a cathode and rotating anode.
13.29	Describe the construction and function of tube housing.
13.30	Identify the parts of an x-ray tube.
13.31	Determine heat units and cooling characteristics of x-ray tube housings.
13.32	Propose methods to extend tube life.
13.33	Discuss application and components of automatic exposure devices.

13.34	State the principles of x-ray production.
13.35	Compare the production of bremsstrahlung with the production of characteristic radiations.
13.36	Compare various photon interactions in terms of description of interaction, relation to atomic number and applications.
13.37	Discuss relationships of wavelength and frequency to beam characteristics.
13.38	Define units of radiation measurement and provide an example of its application.
14.0	Demonstrate the principles of radiation protection and safety for the radiation therapist. - The student will be able to:
14.01	Distinguish between somatic and genetic effects of radiation exposure.
14.02	Differentiate between stochastic and non-stochastic effects of radiation exposure.
14.03	Defend the concept of as low as reasonably achievable (ALARA).
14.04	Discuss the concept of negligible individual risk.
14.05	Describe the legal and ethical radiation protection responsibilities of radiation workers.
14.06	Use appropriate SI terminology and units when discussing radiation protection issues.
14.07	Select the correct SI units of radiation for exposure, absorbed dose, dose equivalence and radioactivity.
14.08	Discuss the interrelationship between relative biological effectiveness and quality factors.
14.09	Explain the theory, operation, applications and limitations of radiation detection devices.
14.10	State the authority, boundaries and regulations of the state and national regulatory agencies.
14.11	Discuss the requirements and responsibilities of the radiation safety officer.
14.12	Compare the various methods used for personnel monitoring.
14.13	State the exposure limits for occupational and non-occupational individuals.
14.14	Explain techniques used to reduce unnecessary dose to the patient.
14.15	Develop an emergency action plan for equipment failure.
14.16	Discuss the principles of radiation protection room design factors.
14.17	Describe the elements of a radiation protection survey for an inpatient undergoing brachytherapy.

14.18	Calculate exposure doses based on time, distance and type of radioactivity.
14.19	Describe the procedure for the wipe test.
14.20	Describe procedures to receive and ship radioactive materials.
14.21	Evaluate a record keeping system for radioactive sources to ensure inclusion of all required elements.
15.0	Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery. - The student will be able to:
15.01	Differentiate between the roles and responsibilities of health care team members treating cancer patients.
15.02	Demonstrate applications of professional self-care.
15.03	Examine different psychological aspects of dying.
15.04	Explain the dynamics of communicating with the cancer patient and family.
15.05	Recognize radiation side effects and complications and select the appropriate medical intervention.
15.06	Identify factors that influence a patient's emotional responses.
15.07	Formulate content for answers to questions frequently asked by patients.
15.08	Assess the physical condition of the patient before, during and after treatment delivery.
15.09	Demonstrate application of the principles of health safety.
15.10	Discuss the principles of medication administration.
15.11	Recognize common medications and explain their actions and side effects.
15.12	Evaluate a patient for an adverse reaction to medication.
15.13	Describe emergency response procedures.
15.14	Describe the proper care of patients with tubes.
15.15	Provide patient education for medical procedures.
15.16	Assess the patient before, during and after brachytherapy procedures.
15.17	Demonstrate the application of the principles of radiation protection during brachytherapy procedures.
15.18	Assess the nutritional status of the cancer patient to provide nutritional education or intervention.



15.19	Demonstrate proper use of the principles of patient safety and transfer.
15.20	Provide appropriate patient education following patient assessment.
15.21	Select patient education materials appropriate for patient needs.
15.22	Compare conventional and integrative medicine.
16.0	Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics. - The student will be able to:
16.01	Compare and contrast atomic structure and composition among the elements, including but not limited to particles (their location, energy level and charge), atomic number, and mass number.
16.02	Compare isotope, isotone, isobar, and isomer.
16.03	Discuss nuclear stability and types of radioactive decay.
16.04	Categorize the four fundamental forces of nature.
16.05	Differentiate between electromagnetic (EM) radiation and their characteristics.
16.06	Describe the processes of ionization and excitation.
16.07	Calculate radioactivity, decay constant, activity and half-life, average life and attenuation requirements for commonly used isotopes in radiation therapy.
16.08	Differentiate between artificially produced and naturally occurring therapeutic nuclides.
16.09	Identify the radioactive series and the decay schemes for commonly used radiation therapy nuclides.
16.10	Explain the various forms of radioactive equilibrium.
16.11	Identify nuclear reactions by recognizing the projectile and radiation emitted.
16.12	Define fission and fusion.
16.13	Discuss the activation of nuclides in terms of yield, probability, activity growth, and saturation activity.
16.14	Describe methods of artificial production of radionuclides.
16.15	Describe x-ray production for linear accelerators.
16.16	Compare and contrast the factors that influence x-ray production and output.
16.17	Compare and contrast the energy ranges and characteristics of the various radiation therapy modalities (Grenz-ray through megavoltage).
16.18	Discuss all components and function in a linear accelerator.

16.19	Discuss methods of x-ray production in alternate therapy units (e.g., tomotherapy, stereotactic radiosurgery, etc.).
16.20	Compare the characteristics of other radiation therapy beams (cyclotron and other accelerated particles).
16.21	State the gamma energies and average gamma energy of cobalt 60 ( $^{60}\text{Co}$ ).
16.22	Compare the characteristics of an isotope beam and an x-ray beam.
16.23	Explain linear energy transfer (LET).
16.24	Compare photon interactions with matter and classify radiations produced by direct and indirect ionization.
16.25	Explain major influencing factors of photon beam attenuation.
16.26	Describe the parameters of narrow beam geometry used in the measurement of attenuation.
16.27	Plot heteroenergetic and monoenergetic beam attenuation data.
16.28	Calculate half-value layer (HVL).
16.29	. Calculate the homogeneity coefficient.
16.30	Calculate attenuation requirements for beam modification devices.
16.31	Discuss activation of clinical accessories and alternate shielding materials due to photodisintegration.
16.32	Explain charged particle interactions with matter, describing dose deposition, energy loss and shielding requirements.
16.33	Define mass stopping power.
16.34	Describe a Bragg curve.
16.35	Discuss the purpose and importance of the National Institute of Standards and Technology (NIST).
16.36	Discuss the purpose and importance of the Accredited Dosimetry Calibration Labs (ADCL).
16.37	Demonstrate use of the appropriate type of radiation detector for given clinical applications.
16.38	Calculate correction factors for chamber calibration, temperature, pressure and other factors used to correct a chamber reading.
16.39	Discuss protocols used for external beam calibration.
16.40	Analyze spot check data to make appropriate judgment decisions regarding machine treatment parameters. Describe the quality of a gamma-ray ( $\gamma$ ) beam in terms of HVL, $\gamma$ energy or mean $\gamma$ energy/nuclide of origin.
16.41	Describe beam filtration for the various external beam modalities, including but not limited to purpose, types of filters and their construction, energy considerations, inherent vs. added filtration and effect on HVL.

16.42	Calculate the approximate mean energy of a megavoltage beam.
16.43	Compare absorbed dose vs. exposure.
16.44	Discuss the relationship between kinetic energy released in the medium (KERMA), exposure and absorbed dose.
16.45	Calculate air dose to absorbed dose conversions in tissue, including but not limited to, energy considerations, applicable conversion factors, necessary instrumentation and methods.
16.46	Discuss the clinical importance of phantom material and size when applying the Bragg-Gray Cavity Theory.
16.47	Critique how dose distribution measured in a phantom is used to predict dose distribution in a patient.
16.48	Compare the characteristics and composition of various phantoms.
16.49	Compare source-skin distance (SSD) and isocentric methods of calibration.
17.0	Demonstrate proficiency in research methods and information literacy. - The student will be able to:
17.01	Analyze research articles to determine the accuracy and validity of findings.
17.02	Integrate information literacy concepts into a research project.
17.03	Critique research projects to determine appropriateness and usefulness to the profession.
18.0	Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy. - The student will be able to:
18.01	Relate the importance of imaging with computed tomography, magnetic resonance, and PET-CT in radiation therapy.
18.02	Differentiate between sagittal, coronal and axial planes of the body.
18.03	Review the principles of imaging for imaging modalities using relevant terminology.
18.04	Compare the imaging modalities for application to radiation therapy.
18.05	Identify normal anatomical structures on sectional images.
18.06	Identify topographic anatomy used to locate underlying internal structures.
18.07	Describe image formation and orientation for computed tomography, magnetic resonance, positron emission tomography, ultrasonography, and image fusion.
19.0	Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment. - The student will be able to:
19.01	Compare photon isodose curves for clinically relevant photon beams.
19.02	Describe the general influencing factors that distinguish various isodose curves.

19.03	Determine internal and external patient factors that influence a beam's distribution and apply isodose correction methods.
19.04	Describe methods of determining a patient's external contour, definition of internal structures and volumes of interest used in treatment planning.
19.05	Identify organs and tissues at risk and their dose limitations using published tolerance dose tables.
19.06	Describe how biologic effective dose is influenced by prescription and treatment variables.
19.07	Compare fractionation schemes.
19.08	Discuss the integral dose concept.
19.09	Use appropriate factors for treatment calculations.
19.10	Describe the interrelationships of the various factors used in treatment calculations.
19.11	Perform dose calculations for external photon and electron beam treatments for all clinical variations.
19.12	Calculate the absorbed dose to off-axis points of interest.
19.13	Compare absorbed doses within a treatment volume with beam variations.
19.14	Explain algorithms incorporated into treatment planning computers.
19.15	Describe the clinical applications for moving beam techniques.
19.16	Describe the past pointing technique.
19.17	Calculate equivalent squares using various methods and consider the limitations of each.
19.18	Describe the effect of asymmetric beam collimation on dose distribution.
19.19	Describe methods for determining dose distribution at points outside the treatment field.
19.20	Calculate dose under a block.
19.21	Evaluate a variety of treatment plans for clinical use.
19.22	Identify all possible techniques that may be employed to clinically match adjacent fields.
19.23	Describe the multiple junction shift methods.
19.24	Examine hot and cold regions that occur with the various matching methods, and describe the methods used to eliminate them.
19.25	Describe procedures for permanent record and legal documentation of matching fields.

19.26	Analyze dose distributions to determine the need for beam modifiers.
19.27	Compare various methods of tissue compensation and the dosimetric impact.
19.28	Examine the fabrication of 2-D and 3-D compensators.
19.29	Construct manual and computerized isodose curves.
19.30	Differentiate between isodose distributions for all clinical variations.
19.31	Evaluate possible corrections for treatment errors to correct misadministration of prescribed dose.
19.32	Differentiate between the treatment planning terms: maximum, minimum, mean, modal and median dose.
19.33	Describe International Commission on Radiological Units (ICRU) recommendations on dose variance within a target volume and the effect that variances may have on cure rates, local control, and tolerance.
19.34	Analyze dose volume histograms relative to treatment planning.
19.35	Evaluate patient changes to determine the integrity of a treatment plan.
19.36	Compare electron beam depth dose characteristics for various energies.
19.37	Identify clinical factors that would influence beam type and energy selection.
19.38	Differentiate between standard treatment distance and virtual distance.
19.39	Discuss why equivalent squares used with photon beams are inappropriate with electron beams.
19.40	Describe how inhomogeneities influence electron beam path.
19.41	Discuss the considerations of matching an electron field to other adjacent photon or electron fields.
19.42	Analyze which shielding materials and thickness would be needed to attenuate electron beams to appropriate levels.
19.43	Describe how electron shielding materials should be arranged for external vs. internal shielding.
19.44	Discuss changes in dose rate and dose distribution with changes in blocking and electron energy.
19.45	Compare calculations of shielding thicknesses to measured data for electron beams.
19.46	Determine why specific isodose lines are prescribed for various clinical situations involving critical and noncritical structures.
19.47	Calculate percentage depth dose for 10%, 50%, 80%, and 90% lines for various electron energies.
19.48	Describe the considerations in the clinical application of special electron treatments, including total skin irradiation and arc therapy.

19.49	Compare the general isodose pattern of particle beams.
19.50	Determine clinical usefulness of various beam types and the clinical implications involved.
19.51	Describe the various imaging modalities in tumor localization and planning.
19.52	Discuss planning techniques used to accommodate the treatment volume shape.
19.53	Discuss isocenter localization for radiosurgery.
19.54	Identify vital structures considered during treatment planning.
19.55	Compare single dose delivery to fractionated dose delivery schedules.
19.56	Discuss the need for specific equipment used to deliver radiation for conformal therapy.
19.57	Discuss the purpose and contents of the ICRU Report 62 and supplements.
19.58	Discuss the computer system features necessary for conformal therapy treatment planning.
19.59	Identify common sites amenable to conformal therapy and the typical doses employed for those sites.
19.60	Compare configurations of multileaf collimation systems.
19.61	Discuss considerations for multileaf collimators.
19.62	Review the differences between static and dynamic multileaf collimation systems.
19.63	Identify appropriate clinical applications for brachytherapy.
19.64	Compare and contrast brachytherapy delivery systems.
19.65	Describe the techniques and applicators used for intracavitary, interstitial and endovascular brachytherapy procedures.
19.66	Explain how simulation and CT data is used for source localization.
19.67	Discuss the objective of treatment planning for brachytherapy procedures.
19.68	Summarize dose specification and prescription techniques for different types of implants.
19.69	Describe optimization techniques used in computer aided dose calculations.
19.70	Discuss record keeping requirements for radioactive material.
19.71	State radiation safety requirements for brachytherapy procedures.

19.72 Identify appropriate clinical applications for using intensity modulated radiation therapy (IMRT).

19.73 Describe the general flow of the IMRT process from patient immobilization through treatment delivery.

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## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical education has been established for the students in these programs. It is designed to permit accurate assessment of the knowledge, skills and abilities of students in the clinical education component of the program. After completion of the prerequisite practice of radiotherapeutic procedures, students indicate readiness for evaluation in a specific category to the clinical affiliate or faculty in the assigned clinical education center.

Clinical education and laboratory activities facilitate student rotations to provide them equitable opportunity to achieve the program clinical objective utilizing multiple affiliates. The resulting clinical rotation and laboratory practicum provides students with patient treatment techniques utilizing a variety of megavoltage equipment, radiation therapy patient care procedures, localization and treatment, radiation therapy physics including dosimetry, machine calibration, quality assurance, handling of sealed radioactive sources and protection, follow up, patient care and patient recordkeeping.

### **Special Notes**

The program is designed to provide the radiation therapy community with workers who, under the supervision of a Radiation Oncologist, uses ionizing radiation to treat disease. The curriculum provides students an opportunity to develop technical and social skills through experiences in the clinic, classroom, and laboratory.

Students are encouraged to become members of their appropriate professional organizations such as the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.



## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Surgical Technology Specialist  
**Career Cluster:** Health Science

CCC	
CIP Number	0351090904
Program Type	College Credit Certificate (CCC)
Program Length	49 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists

**Purpose**

This certificate program is part of Surgical Services AS degree program (1351000002).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as surgical technologists SOC 29-2055.

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical technology procedures, patient safety, use and care of equipment and supplies, CPR, Heart saver, employability skills, and basic computer literacy.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate central supply skills.
- 13.0 Use communication and interpersonal skills as related to surgical technology.
- 14.0 Demonstrate an understanding of the basic sciences related to surgical technology.
- 15.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.
- 16.0 Describe and practice safety measures in the surgical environment.
- 17.0 Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs.
- 18.0 Demonstrate knowledge of the skills necessary to function safely and effectively.
- 19.0 Demonstrate knowledge of and assist with surgical procedures.
- 20.0 Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Surgical Technology Specialist  
**CIP Numbers:** 0351090904  
**Program Length:** 49 Credit Hours  
**SOC Code(s):** 29-2055

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of Surgical Services AS degree program (1351000002). At the completion of this program, the student will be able to:**

**Students completing intended outcomes 12-20, in addition to the health careers core, will meet the requirements of the Surgical Technology Specialist-CCC (SOC Code 29-2055).**

12.0	Demonstrate central supply skills. – The student will be able to:
12.01	Apply the principles of medical/surgical asepsis including attire, environmental control and traffic patterns to control and manage dirty, clean and sterile areas of the operating room and central supply.
12.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
12.03	Inspect and send out for repair instruments, equipment and supplies regarding condition and quantity.
12.04	Describe the methods of disinfection and sterilization.
12.05	Demonstrate the handling, inspection and notification process regarding package integrity.
12.06	Demonstrate correctly decontamination techniques for instruments, equipment, and the environment used for surgical procedures.
12.07	Describe clean and sterile transportation, restocking, and storage principles for instruments, supplies and equipment.
12.08	Identify instruments, supplies and equipment for any surgical procedure.
12.09	Describe various supply distribution and inventory control methods.
12.10	Demonstrate ability to prepare and label items for high level disinfection and sterilization correctly.

12.11	Demonstrate the techniques of high level disinfection and sterilization for immediate use items.
12.12	Demonstrate case cart preparation and management.
13.0	Use communication and interpersonal skills as related to surgical technology. – The student will be able to:
13.01	Describe various forms of communication in the role of surgical technologist.
13.02	Analyze and select the appropriate behavioral response unique to the patient's needs.
13.03	Describe the concepts of conflict resolution, assertive behavior and the principles of teamwork in the surgical environment.
14.0	Demonstrate an understanding of the basic sciences related to surgical technology. – The student will be able to:
14.01	Describe the concepts of microbiology and relate key principles to the surgical environment.
14.02	Compare and contrast the structure and characteristics of microorganisms found in the surgical environment.
14.03	Relate medical terminology, medical abbreviations, and anatomy and physiology to surgical specialties and specific procedures.
14.04	Analyze patient defense mechanisms, the chain of infection and the infectious process as related to surgical practice.
14.05	Demonstrate infection and disease transmission control techniques following the Center for Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) guidelines for surgery.
14.06	Correlate wound classifications and wound healing principles with wound management guidelines.
14.07	Discuss the principles of information technology, electricity and robotics as they relate to surgery.
15.0	Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.-The student will be able to:
15.01	Describe the roles of the anesthesia provider and circulating nurse.
15.02	Analyze the administration of anesthesia including the methods, agents, and techniques.
15.03	Describe the preoperative examination and preparation process for both surgery and anesthesia.
15.04	Describe potential anesthesia and operative complications and interventions for each.
15.05	Define the terminology and describe the basic concepts of pharmacology including pharmacokinetics and pharmacodynamics.
15.06	Identify the classifications, actions, effects and precautions for common drugs used at the sterile field and within the surgical environment.
15.07	Demonstrate the application of the six rights of medication administration (right patient, right medication, right dosage, right route, right time/frequency, and right documentation).
15.08	Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.

15.09	Demonstrate the appropriate methods of transferring and accepting medications onto the sterile field.
15.10	Prepare, manage and label sterile solutions and medications accurately within the sterile field.
15.11	Correctly calculate common medication conversions and dosages.
15.12	Demonstrate preparation and passing of medication mixtures using ratio and proportions correctly. .
15.13	Maintains an accurate account of the amount of each medication and/or solution used at the field and notifies circulator as appropriate to the situation to ensure accurate documentation.
16.0	Describe and practice safety measures in the surgical environment. – The student will be able to:
16.01	Describe the role, job duties and responsibilities of the surgical technologist in the healthcare setting.
16.02	Inspect equipment and supplies for condition and quantity.
16.03	Demonstrate appropriate safety measures to prevent operating room fires and electrical shock from equipment. .
16.04	Describe appropriate safety measures for laser and electrosurgical unit usage in surgery.
16.05	Implement appropriate regulatory and accreditation agency patient safety guidelines
16.06	Describe the role of the surgical technologist in a disaster situation.
16.07	Describe the role of the surgical technologist in an emergency patient situation.
16.08	Prepare the operative site.
17.0	Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs. – The student will be able to:
17.01	Demonstrate patient transfer/transportation techniques used in the operating room (OR).
17.02	Describe appropriate review of the chart including preoperative identification, preoperative checklists, diagnostic tests, lab values and surgical consent.
17.03	Monitor OR traffic, placement of sterile tables and ensure steps are taken to reduce microbial fallout.
17.04	Assist with positioning and apply safety devices correctly to the patient for surgery.
17.05	Describe the function, assembly, application and care of critical specialty equipment utilized. .
17.06	Correlate anesthesia monitoring devices, patient complications and interventions with maintaining patient homeostasis.
17.07	Demonstrate correctly the connection and operation of essential equipment for the surgical procedure.
17.08	Perform steps for Foley catheter insertion and connecting to drainage correctly.

17.09	Demonstrate applicable wound management principles including the placement and security of catheters, wound drainage systems, sterile dressings and splint applications.
17.10	Discuss relevant and unique factors regarding postoperative care specific to the procedure.
18.0	Demonstrate knowledge of the skills necessary to function safely and effectively. – The student will be able to:
18.01	Demonstrate the use of various forms of communication in the role of surgical technologist.
18.02	Maintain current documentation in the clinical setting relative to the surgical technologist role.
18.03	Demonstrate proper use of the communication systems.
18.04	Select and verify required instrumentation, equipment and supplies, including any implants needed for specific surgical procedures using core knowledge and the applicable surgeon preference/procedure cards.
18.05	Demonstrate the surgical scrub and donning of sterile gown and gloves.
18.06	Demonstrate application of sterile technique principles including the appropriate corrective action for common breaks in sterile technique.
18.07	Demonstrate proper draping of tables, solution stands, mayo stand, patient and equipment.
18.08	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).
18.09	Select suture and needle appropriately for each scenario given based on function and type.
18.10	Prepare, pass and monitor sharps, sutures, ligatures, ties and staples.
18.11	Demonstrate assisting gowning/gloving of other sterile team members.
18.12	Participate in the surgical time out to prevent wrong site surgery and delays in the surgical procedure.
18.13	Prepare and pass instruments, equipment, tissue replacement materials, implants and supplies efficiently.
18.14	Monitor the surgical site regarding counted items, stage of surgery, tissue appearance and patient's body fluids.
18.15	Demonstrate correctly the initiation and completion of counts regarding sponges, sharps, instruments and miscellaneous items used within the patients wound to prevent foreign body retention.
18.16	Demonstrate ability to maintain retraction, cut suture, provide retraction and hold instruments in the second assistant role as directed by the surgeon.
18.17	Demonstrate ability to prepare, validate, handle and preserve specimen on and off the sterile field accurately for laboratory analysis.
19.0	Demonstrate knowledge of and assist with surgical procedures. – The student will be able to:
19.01	Correlate the preoperative diagnosis, diagnostic interventions, common complications, and operative pathophysiology relative to specific surgical procedures.

19.02	Describe the types of incisions, methods of wound closure, and mechanisms of wound management.
19.03	Describe the usual sequence of a common surgical procedure (i.e. incision into the anatomy, dissection of the anatomy, operative steps of the procedure, and closing of the anatomy.)
19.04	Select the appropriate instrument, equipment, or supply for each step of the procedure.
19.05	Demonstrate effective perioperative case management ensuring cost control and time/motion economy methods are utilized to maximize the efficiency of the OR team.
20.0	Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology. – The student will be able to:
20.01	State methods, standards and aids that assist a surgical technologist with interpreting and following legal responsibilities.
20.02	Provide health care within the ethical/legal framework of the surgical technologist's role.
20.03	Describe the principles of problem solving and confidentiality in ethical decision making and risk management.
20.04	Describe the key qualities related to the development of a surgical conscience.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:6.

### Special Notes

Selected portions of this program may be utilized to provide additional skills to enable nursing graduates to become employable in operating rooms as surgical technologists. The program should meet the requirements of the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES).

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

After successful completion of a Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES) accredited program, students are eligible to take the National Board of Surgical Technologist and Surgical Assisting (NBSTSA), Certified Surgical Technologist exam.

Please contact NBSTSA for more information on this exam:

National Board of Surgical Technologist and Surgical Assisting (NBSTSA)  
6 West Dry Creek Circle, Suite 100 Littleton, Colorado 80120  
**Toll-free:** (800) 707-0057

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Surgical First Assistant  
**Career Cluster:** Health Science

CCC	
CIP Number	0351090908
Program Type	College Credit Certificate (CCC)
Program Length	59 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists 31-9099 Healthcare Support Workers, All Other

**Purpose**

This certificate program is part of the Surgical First Assisting AS degree program (1351090900).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as a Surgical First Assistant Expanded Function (Surgical technologists is SOC 29-2055).

The content includes, but is not limited to, communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, basic computer literacy and surgical first assistant skills such as preoperative duties, aid in exposure, hemostasis, closure, intraoperative technical functions, and postoperative duties under the direction and supervision of the surgeon.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate central sterile processing skills.
- 13.0 Demonstrate competencies in the core components of the surgical first assistant related to communication and interpersonal skills.
- 14.0 Demonstrate an understanding of the basic sciences related to surgical first assisting.
- 15.0 Describe and practice safety measures in the surgical environment.
- 16.0 Perform patient care procedures related to the surgical environment and describe methods for meeting patient's needs.
- 17.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.
- 18.0 Demonstrate knowledge of the basic surgical skills necessary to function safely and effectively.
- 19.0 Demonstrate competencies in the core components of the surgical first assistant related to knowledge and skills.
- 20.0 Demonstrate competencies in the core components of the surgical first assistant related to legal and ethical responsibilities.

Florida Department of Education  
Student Performance Standards

**Program Title:** Surgical First Assistant  
**CIP Number:** 0351090908  
**Program Length:** 59 credits  
**SOC Code(s):** 29-2055; 31-9099

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Surgical First Assisting AS degree program (1351090900). At the completion of this program, the student will be able to:**

**Students completing intended outcomes 12-20 will meet the requirements of the Surgical First Assistant –CCC Program (SOC Code 29-2055).**

12.0	Demonstrate central sterile processing skills. -- The student will be able to:
12.01	Apply the principles of medical/surgical asepsis including attire, environmental control and traffic patterns to control and manage dirty, clean and sterile areas of the operating room and central supply.
12.02	Identify relevant federal, state and local guidelines, standards and regulations.
12.03	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, reaching, and other work related activities.
12.04	Describe the methods of disinfection and sterilization.
12.05	Describe the importance of following device, equipment, instrument or supply manufacturer’s instructions for decontamination, processing, operation, and troubleshooting.
12.06	Demonstrate correctly decontamination techniques for instruments, equipment and the environment used during surgical procedures.
12.07	Demonstrate appropriate techniques for inspection, testing and sending out for repair instruments, equipment and supplies regarding condition, quantity and quality.
12.08	Describe clean and sterile transportation, restocking, and storage principles for instruments.
12.09	Analyze the results of sterilization process monitors used in sterilization units, sterilizations cycles and ensures documentation meets the safe parameters for each prior to use of an item.

12.10	Describe clean and sterile transportation, restocking, and storage principles for supplies in the facility (receivables, sterile, clean, or contaminated).
12.11	Demonstrates the ability to identify and select appropriate instruments, equipment and supplies for any surgical procedure.
12.12	Demonstrate the ability to prepare and label items for high level disinfection and sterilization as required.
12.13	Demonstrate the techniques of high level disinfection and sterilization for immediate use items.
12.14	Describe various supply distribution and inventory control methods.
12.15	Demonstrate case cart preparation and management.
13.0	Demonstrate competencies in the core components of the surgical first assistant related to communication and interpersonal skills -- The student will be able to:
13.01	Demonstrate proper use of communication systems.
13.02	Use various forms of communication in the role of Surgical First Assistant to communicate relevant, accurate and complete information in a concise and clear manner.
13.03	Collaborate with the patient, surgeon, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's surgical care to promote positive outcomes including the use of preoperative checklists and preoperative assessment and evaluations methods.
13.04	Demonstrate patient interviewing techniques.
13.05	Demonstrate the ability to analyze and communicate specific patient care factors or needs and the surgeon's preferences to the surgical team including suture needs, specialty supplies and instrumentation, and equipment.
13.06	Describe the concepts of conflict resolution, assertive behavior and the principles of teamwork as a patient advocate and assistant to the surgeon.
13.07	Demonstrate competency regarding reporting and documentation responsibilities in the clinical setting.
13.08	Employ leadership skills to accomplish organizations goals and objectives.
13.09	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
13.10	Conduct and participate in meetings to accomplish work tasks.
13.11	Employ mentoring skills to inspire and teach others.
14.0	Demonstrate an understanding of the basic sciences related to surgical first assisting.--The student will be able to:
14.01	Apply knowledge of the microbial environment to the surgical care of the patient.
14.02	Analyze patient defense mechanisms, the chain of infection and the infectious process as related to surgical practice and the prevention of surgical site infections.
14.03	Correlate wound classifications and wound healing principles with wound management guidelines and complications.

14.04	Demonstrate infection and disease transmission control techniques following the Center for Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) guidelines for surgery.
14.05	Describe the causes, clinical signs and symptoms and prevention measures for surgical infections.
14.06	Describe the basic composition, principles, clinical signs and symptoms regarding electrolytes and fluid balance including the mechanism of hypovolemic, septic, hemorrhagic and cardiogenic shock.
14.07	Correlates the principles and disorders of hematology, hemostasis, types of blood components, and coagulation with hemostasis in surgery.
14.08	Discuss the principles of information technology, electricity, and robotics as they relate to surgery.
15.0	Describe and practice safety measures in the surgical environment.--The student will be able to:
15.01	Inspect emergency equipment and supplies for condition and quantity.
15.02	Implement appropriate Joint Commission patient safety goals.
15.03	Demonstrate appropriate safety measures to prevent operating room fires and electrical shock from equipment.
15.04	Apply knowledge of surgical hazards to safe patient care.
15.05	Demonstrate the safe inspection and utilization of laser, electrical, endoscopic, and robotic equipment.
15.06	Describe and practice appropriate safety measures for laser, electrical, endoscopy and robotic surgery.
15.07	Describe the role preventive maintenance, prevention, correction, and documentation plays in patient and personnel safety and the prevention of medical errors in the surgical setting.
15.08	Explain the purpose of Florida's "Right to Know" law and its provisions.
15.09	Describe the role of the surgical technologist and surgical first assistant in an emergency patient situation.
15.10	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.
15.11	Describe the preparation and planning, detection and communication, incident management and support systems, safety and security, clinical/public health assessment and intervention, contingency, continuity and recovery and the public health law and ethics of All-Hazards Preparation for disasters.
15.12	Conduct technical research to gather information for decision-making.
15.13	List and describe quality control systems and/or practices common to the workplace.
15.14	Employ critical thinking skills independently and in teams to solve problems, resolve conflicts, and make decisions.
16.0	Perform patient care procedures related to the surgical environment and describe methods for meeting patient's needs.--The student will be able to:
16.01	Identify the roles of the members of the surgical team during each phase of surgery.

16.02	Assist surgeon with the perioperative care of the surgical patient.
16.03	Correlate the preoperative examination and preparation process for both surgery and anesthesia with the identification of potential patient factors that may inhibit positive outcomes.
16.04	Describe appropriate review and identification of patient factors regarding the chart including preoperative identification, preoperative checklists, diagnostic tests, lab values and surgical consent.
16.05	Demonstrate safe patient transfer/transportation techniques used in the perioperative setting.
16.06	Monitor OR traffic, placement of sterile tables and ensure steps are taken to reduce microbial fallout.
16.07	Correlate anesthesia monitoring devices, patient complications and interventions with maintaining patient homeostasis.
16.08	Demonstrate the principles of safe positioning, application of safety devices, and restraining patient for surgery correlating the prevention of potential complications with the need for patient stability.
16.09	Demonstrate the selection of the appropriate solution and preparation of the operative site for the surgical procedure.
16.10	Perform steps for Foley catheter insertion and connection to drainage.
16.11	Describe the safe usage of critical instruments, equipment and supplies utilized intraoperatively including the electrosurgical unit, Lasers, Ultrasonic equipment, endoscopy equipment, robotics, insufflators, light sources, microscopes, power tools, suction, tourniquets, etc.
16.12	Demonstrate correctly the connection and operation of essential instruments, equipment and supplies for the surgical procedure.
16.13	Demonstrate correct mathematical skills related to dosage available versus dosage needing when drawing up or administering medications.
16.14	Demonstrate correctly the techniques for injection of local anesthetics.
16.15	Demonstrate knowledge of wound management techniques, including suturing techniques in the operating room, perioperative care of special needs patients, and perioperative assessment of the skin.
16.16	Demonstrate applicable wound management principles including the placement and security of catheters, wound drainage systems, sterile dressings and cast applications.
16.17	Discuss relevant and unique factors regarding postoperative care specific to the procedure.
17.0	Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.--The student will be able to:
17.01	Analyze the terminology the basic concepts of pharmacology and drug administration including pharmacokinetics and pharmacodynamics.
17.02	Describe pharmacological concepts relative to the administration of all anesthesia methods, agents, and techniques including the role of the anesthetist, the first assistant and the circulator during induction and extubation.
17.03	Identify the classification, actions, effects and precautions of common drugs used at the field, and within the surgical environment.
17.04	Apply knowledge of the pharmacologic agents used in the treatment of the surgical patient.



17.05	Describe potential anesthesia and operative complications and interventions for each.
17.06	Demonstrate the application of the six rights of medication administration.
17.07	Identify the correct medication form and method of application.
17.08	Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.
17.09	Pour or receive, measure, prepare and manage sterile solutions accurately within the sterile field.
17.10	Demonstrate the appropriate methods of transferring and accepting medications onto the sterile field.
17.11	Label properly all fluids and medications used within the sterile field.
17.12	Demonstrates ability to correctly calculate common medication conversions and dosages.
17.13	Apply correct unit of measure for each medication.
17.14	Demonstrates preparation and passing of medication mixtures using ratio and proportions correctly.
17.15	Maintains an accurate account of the amount of each medication and/or solution used at the field and notifies circulator as appropriate to the situation to ensure accurate documentation.
17.16	Describe the adverse effects of local and topical anesthetics.
18.0	Demonstrate knowledge of the basic surgical skills necessary to function safely and effectively.--The student will be able to:
18.01	Demonstrate an understanding of advanced anatomy, physiology, the disease processes and the relationship of the processes to the specific types of pathologies according to body systems.
18.02	Correlate the preoperative diagnosis, diagnostic interventions, common complications, and operative pathophysiology relative to specific surgical procedures.
18.03	Correlate the preoperative diagnosis, operative anatomy, physiology and pathology, usual incision, wound closure techniques, medications utilized, common complications, and the usual sequence as related to specific surgical procedures.
18.04	Select and verify required instrumentation, equipment and supplies, including any implants needed for specific surgical procedures using core knowledge and the applicable surgeon preference/procedure cards.
18.05	Demonstrate an understanding of diagnostic images as related to surgical anatomy.
18.06	Demonstrate application of aseptic and sterile technique principles including the appropriate corrective action for common breaks in sterile technique that may occur.
18.07	Demonstrate the surgical scrub and donning of sterile gown and gloves.
18.08	Demonstrate the principles of sterile draping.
18.09	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).

18.10	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).
18.11	Prepare, pass, utilize, and monitor sharps, sutures, ligatures, ties and staples correctly.
18.12	Prepare, pass, utilize, and monitor amount given for medications and solutions utilized on the sterile field.
18.13	Demonstrate assisted gowning/gloving for others.
18.14	Participate in the surgical time out to prevent wrong site surgery and delays in the surgical procedure.
18.15	Select, prepare, pass, and utilize instruments, equipment, tissue replacement materials, implants and supplies efficiently.
18.16	Monitor the surgical site regarding counted items, stage of surgery, tissue appearance and patient's body fluids, e.g. blanching, desiccation, color of blood, blood loss, bile leaks, ascites, etc.
18.17	Demonstrate correctly the initiation and completion of counts regarding sponges, sharps, instruments and miscellaneous items used within the patient's wound to prevent foreign body retention.
18.18	Describe the types of incisions, methods of wound closure, and mechanisms of wound management.
18.19	Describe the usual sequence of a common surgical procedure. ( i.e. incision into the anatomy, dissection of the anatomy, operative steps of the procedure, and closing of the anatomy).
18.20	Selects the appropriate instrument, equipment, or supply for each step of the procedure.
18.21	Demonstrate ability to prepare, validate, handle and preserve specimen accurately for laboratory analysis.
18.22	Demonstrates knowledge of and assists with surgical procedures while functioning in the roles of scrub and assistant circulator.
18.23	Demonstrate effective perioperative case management ensuring cost control and time/motion economy methods are utilized to maximize the efficiency of the OR team.
19.0	Demonstrate competencies in the core components of the surgical first assistant related to knowledge and skills.-- The student will be able to:
19.01	Prioritize care or actions to be taken in a given circumstance to expedite the operative procedure or emergency situation.
19.02	Describe preoperative diagnosis, common complications, operative pathophysiology and postoperative care related to the specific surgical procedures performed.
19.03	Analyze common patient assessments including skin and chart review relating relevant diagnostic and monitoring results to the surgeon as applicable to the surgical specialty.
19.04	Demonstrate preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, application of tourniquet, surgical skin preparation, catherization, draping, and sterile setup preparation.
19.05	Demonstrate and describe types of incisions and insertion of trocars.
19.06	Identify types of tissue, organs, and gross anatomical structures correctly during surgical procedures.
19.07	Demonstrate appropriate tissue handling techniques including the care of the surgical specimens.

19.08	Provide appropriate exposure and visualization of the operative field for the surgeon.
19.09	Describe the appropriate sequence for common surgical procedures.
19.10	Utilize appropriate techniques to assist with hemostasis.
19.11	Demonstrate appropriate safe surgical techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known surgical hazard.
19.12	Participate in volume replacement or autotransfusion techniques and medication administration as appropriate.
19.13	Select appropriate instruments and supplies for the type of tissue.
19.14	Demonstrate competence with technology, the use of instruments, equipment supplies and medications for the surgical procedure.
19.15	Use surgical instruments skillfully in ways consistent with their design and purpose.
19.16	Utilize appropriate techniques to assist with the closure of body planes.
19.17	Select and apply appropriate wound dressings.
19.18	Assist surgeon in securing drainage systems to tissue.
19.19	Evaluate patient and report appropriately any abnormal condition found post-op related to positioning.
19.20	Assist surgeon with postoperative care of the patient to facilitate proper patient care.
19.21	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, surgical misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and exposure, retraction and compression injuries.
19.22	Facilitate the continuity of care within and across the healthcare settings to access available resources and services.
20.0	Demonstrate competencies in the core components of the surgical first assistant related to legal and ethical responsibilities. --The student will be able to:
20.01	State methods, standards and aids that assist a surgical first assistant with interpreting and following legal responsibilities.
20.02	Describe the importance of maintaining credentials and following the appropriate credentialing policy in accordance with hospital policy and appropriate laws and regulations.
20.03	Explain the job requirements.
20.04	Describe the key elements related to the development of a surgical conscience.
20.05	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as a surgical assistant, and the professional skills necessary to fulfill the role.
20.06	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.

20.07 Describe the principles of problem solving and confidentiality in ethical decision making and risk management.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

In a simulated surgical environment, students practice preparing, setting up and maintaining a sterile field, sterilization and disinfection procedures, preparation of supplies and equipment for surgery, and patient preparation.

Clinical learning experiences in an operating room and related areas are an integral part of this program.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

The Surgical First Assistant Core Curriculum should be taught by qualified staff as outlined in the most recent approved CAAHEP (Commission on Accreditation on Allied Health Education Programs) accreditation standards and guidelines.

Entering students who have successfully completed the program 0351090905 or 0351090904, Surgical Technology or are currently Nationally Certified as a CST (Certified Surgical Technologist) or SA-C (Surgical Assistant-Certified) should be given appropriate advanced standing.

After successful completion of an approved and accredited surgical first assistant program, students are eligible to take the National Board of Surgical Technology and Surgical Assisting First Assistant exam as approved.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Diagnostic Medical Sonography Specialist  
**Career Cluster:** Health Science

CCC	
CIP Number	0351091005
Program Type	College Credit Certificate (CCC)
Program Length	47 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2032 Diagnostic Medical Sonographers

**Purpose**

This certificate program is part of the Diagnostic Medical Sonography Technology AS degree program (1351091004).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as diagnostic medical sonographers, SOC Code 29-2032, or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to anatomy, physiology and pathology of the abdominal, pelvic, and urogenital structures; physics; instrumentation; equipment standards; biological effect of ultrasound; patient care; clinical medicine; applications and limitations of ultra-sound; related diagnostic procedures; image evaluation; administration; first aid and cardiopulmonary resuscitation; employability skills; leadership and human relations skills; health and safety.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care.
- 13.0 Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis.
- 14.0 Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound.
- 15.0 Demonstrate knowledge of the principles of Doppler.
- 16.0 Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting.
- 17.0 Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems.
- 18.0 Apply knowledge of the anatomy and scanning techniques related to superficial structures.
- 19.0 Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands.
- 20.0 Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis.
- 21.0 Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics.
- 22.0 Develop a continuous awareness of the disease processes.
- 23.0 Apply accumulated knowledge to the process of creating diagnostic sonograms.
- 24.0 Apply skills needed to complete diagnostic images of high quality from a variety of scanning units.



Florida Department of Education  
Student Performance Standards

**Program Title:** Diagnostic Medical Sonography Specialist  
**CIP Number:** 0351091005  
**Program Length:** 47 credit hours  
**SOC Code(s):** 29-2032

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Diagnostic Medical Sonography Technology AS degree program (1351091004). At the completion of this program, the student will be able to:**

**Diagnostic Medical Sonography Specialist: The intended outcomes complete the occupational completion point of Diagnostic Medical Sonography Specialist.**

12.0	Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care. – The student will be able to:
12.01	Explain the role of the sonographer.
12.02	Describe the relationship of ultrasound to other imaging-modalities.
12.03	Describe and demonstrate the proper uses of orientation and standard labeling of ultrasound images.
12.04	Explain the basic concepts of ultrasound equipment available and demonstrate safety in their use and basic techniques of scanning.
12.05	Explain and demonstrate the criteria for image evaluation and specifically of special sonographic parameters.
12.06	Demonstrate and describe proper body mechanics to avoid work related musculoskeletal disorders when performing sonographic examinations.
12.07	Describe special problems encountered and methods related to medical ethics and law in sonography.
12.08	Describe the organizational structure common to most hospitals with special emphasis placed on the role of the ultrasound department.
12.09	Describe the relationship of the sonographer to the patients and their special needs.

12.10	Demonstrate professional communication skills required on a daily basis in the health care setting.
12.11	Explain and demonstrate the methods of patient preparation and care before and during a sonogram.
12.12	Demonstrate proper body mechanics when transporting and assisting patients.
12.13	Discuss current trends in sonographic technology and techniques.
12.14	Demonstrate proper universal precautions and sterile techniques when preparing for a sonographic procedure.
13.0	Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis. – The student will be able to:
13.01	Explain what sound is and its characteristics.
13.02	Compare the difference between pulsed and continuous wave ultrasound.
13.03	Explain amplitude and intensity of sound as it applies to sonography.
13.04	Describe the causes and effects of attenuation and acoustic impedance on ultrasound.
13.05	Identify the causes and effects of incidence, scattering and refraction of ultrasound.
13.06	Explain the Doppler Effect as it relates to ultrasound.
13.07	Describe the factors of attenuation versus depth penetration of ultrasound in human tissue.
13.08	Identify resolution and controlling factors of resolution as applied to sonography.
13.09	Discuss and demonstrate the basic principles governing sound and sound interaction in various types of tissue.
13.10	Describe and demonstrate the conditions affecting sound transmission such as attenuating factors.
13.11	Relate mathematical formulas to the interaction of sound with various mediums.
13.12	Describe resolution and its effect on the final image.
13.13	Describe and demonstrate the factors that control and determine axial, elevational and lateral resolution.
14.0	Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound. – The student will be able to:
14.01	Describe piezoelectric effects.
14.02	Describe transducer construction.
14.03	Discuss historical perspectives related to the development of the ultrasound system.

14.04	Explain and describe how signal processing affects image production and presentations.
14.05	Discuss basic system operation in the form of block diagrams for real-time and Doppler image production.
14.06	Describe the purpose and use of typical controls located on ultrasound systems.
14.07	Identify methods of determining and assuring quality control both sonographically and photographically.
14.08	Discuss common processing techniques including but not limited to harmonics, persistence, spatial compounding, panoramic imaging, and RES.
14.09	Discuss causes, detection and control of factors that may create biologic effects in human tissue with insonation at the diagnostic medical sonography exposure level.
15.0	Demonstrate knowledge of the principles of Doppler. – The student will be able to:
15.01	Explain the general principles of Doppler techniques and the Doppler formula.
15.02	Describe how pulse wave Doppler is processed and displayed.
15.03	Describe how color-flow Doppler is processed and displayed.
15.04	Describe how power Doppler is processed and displayed.
15.05	Identify normal and abnormal Doppler wave forms.
15.06	Discuss the advantages and disadvantages of the various Doppler methods.
15.07	Describe the purpose and use of typical controls used to optimize Doppler acquisition and display.
15.08	Demonstrate skills required on a daily basis in the typical Sonography setting for obtaining and displaying Doppler.
16.0	Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting. – The student will be able to:
16.01	Utilize patient information systems.
16.02	Demonstrate appropriate transducer selection for specific sonographic application.
16.03	Utilize amplification in all its forms to produce a diagnostic quality sonogram.
16.04	Utilize power to produce a diagnostic quality sonogram while maintaining the ALARA principle.
16.05	Utilize the various forms of processing to produce a diagnostic quality sonogram.
16.06	Utilize the various types of scanning techniques and patient positioning required to produce diagnostic quality sonograms.
16.07	To explain and recognize typical artifacts as found in sonographic imaging.

16.08	Utilize test objects and phantoms.
17.0	Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems. – The student will be able to:
17.01	Identify gross abdominal structures as demonstrated by ultrasound such as: the liver, gall bladder, aorta, inferior vena cava, stomach, pancreas, bowel, spleen, lymph nodes, retroperitoneum, and peritoneal cavity.
17.02	Identify the gross upper abdominal organs in two planes.
17.03	Identify the gross retroperitoneal organs, bowel and peritoneum in two planes.
17.04	Explain the physiology of the upper abdominal organs and the related-laboratory results.
17.05	Explain the physiology of the retroperitoneal organs, bowel and peritoneum.
17.06	Explain and demonstrate the protocol for sonographic examination of the upper abdominal organs.
17.07	Explain and demonstrate the protocol for sonographic examination of the retroperitoneal organs, bowel, and peritoneum.
17.08	Explain the common pathologies related to the upper abdomen including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
17.09	Explain the common pathologies related to the retroperitoneal organs, bowel and peritoneum including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
17.10	Explain screen orientation and its relationship to the upper abdomen and retroperitoneal structures.
17.11	Describe and perform procedures of a complete ultrasound examination of the upper abdomen from preparation to reporting.
17.12	Describe and perform procedures of a complete ultrasound examination of the bowel, lymph nodes, retroperitoneum, and peritoneal cavity from preparation to reporting.
18.0	Apply knowledge of the anatomy and scanning techniques related to superficial structures. – The student will be able to:
18.01	Identify gross superficial structures as demonstrated by ultrasound including but not limited to: the thyroid, scrotum (testicular), abdominal wall, neck, breast, prostate, and musculoskeletal.
18.02	Identify superficial structures in two planes.
18.03	Explain the physiology of the superficial structures and the related laboratory results.
18.04	Explain and demonstrate the protocol for the sonographic examination of superficial structures.
18.05	Explain the common pathology related to the superficial structures including the sonographic appearance of these pathologies and corresponding lab values, patient history, and symptoms.
18.06	Describe and perform procedures of a complete ultrasound examination of each of the superficial structures from preparation to reporting.
19.0	Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands. – The student will be able to:

19.01	Identify the gross structures of the urinary system as demonstrated by ultrasound including but not limited to the kidney, ureters, and urinary bladder.
19.02	Identify the gross organs of the urinary system in two planes.
19.03	Identify the gross adrenals in two planes.
19.04	Explain the physiology of the urinary system organs and the related-laboratory results.
19.05	Explain the physiology of the adrenals and the related-laboratory results.
19.06	Explain and demonstrate the protocol for sonographic examination of the urinary system organs.
19.07	Explain and demonstrate the protocol for sonographic examination of the adrenals.
19.08	Explain the common pathologies related to the urinary system organs including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
19.09	Explain the common pathologies related to the adrenals including the sonographic appearance of these pathologies corresponding lab values, patient history, and symptoms.
19.10	Explain screen orientation and its relationship to the urinary system structures and the adrenals.
19.11	Describe and perform procedures of a complete ultrasound examination of the urinary system from preparation to reporting.
19.12	Describe and perform procedures of a complete ultrasound examination of the adrenals from preparation to reporting.
20.0	Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis. – The student will be able to:
20.01	Identify the gross female pelvic structures as demonstrated by ultrasound including but not limited to the female reproductive organs and urinary bladder.
20.02	Identify the gross female pelvic organs in two planes.
20.03	Explain the physiology of the female pelvic organs and the related laboratory results.
20.04	Explain and demonstrate the protocol for sonographic examination of the female pelvic organs.
20.05	Explain the common pathologies related to the female pelvis including the sonographic appearance of these pathologies corresponding lab values, patient history, and symptoms.
20.06	Explain screen orientation and its relationship to the female pelvic structures.
20.07	Describe and perform procedures of a complete ultrasound examination of the female pelvis from preparation to reporting.
20.08	Explain the protocol for both transabdominal, translabial, and transvaginal pelvic ultrasound.
21.0	Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics. – The student will be able to:
21.01	Identify gross obstetrical structures as demonstrated by ultrasound including but not limited to the uterus and adnexa in both the

	pregnant and postpartum state.
21.02	Discuss anatomy and physiology of the various stages of fetal development as related to ultrasound.
21.03	Discuss anatomy and physiology of the placenta at all stages of development.
21.04	Describe the basic stages of embryology and sonographic relationships.
21.05	Describe events occurring in the first trimester and their relationship to ultrasound.
21.06	Explain the physiology of organs related to obstetrics.
21.07	Explain and demonstrate the protocol for sonographic examinations used in obstetrics.
21.08	Explain the common pathologies related to obstetrics including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
21.09	Explain screen orientation and its relationship to the organs related to obstetrics.
21.10	Describe and perform methods for determining gestational age and fetal growth by ultrasound using appropriate biometrics.
21.11	Explain the effects of specific diseases common to the gestational period.
21.12	Compare normal and abnormal states of embryology in the human as demonstrated by ultrasound.
21.13	Perform a biophysical profile to determine fetal well-being.
21.14	Compare the normal and pathologic appearance of the fetus and the fetal environment.
21.15	Demonstrate special techniques of ultrasound scanning and collateral processes during pregnancy.
21.16	Explain the protocol and AIUM guidelines for obstetrical ultrasound.
21.17	Explain and demonstrate the special safety precautions required during an obstetrical ultrasound with a focus on AIUM guidelines.
21.18	Describe and perform procedures of a complete obstetrical ultrasound examination from preparation to reporting.
21.19	Describe and perform Doppler applications for evaluation of a pregnancy (i.e. umbilical artery, etc.).
22.0	Develop a continuous awareness of the disease processes. – The student will be able to:
22.01	Discuss basic concepts of the causes of disease.
22.02	Discuss common urogenital pathology.
22.03	Discuss gastrointestinal diseases.

22.04	Discuss common pathology found in obstetrics and gynecology.
22.05	Discuss common pathology found in the cardiovascular system.
22.06	Discuss common pathology found in hepatobiliary system to include: liver, gallbladder, pancreas and spleen.
22.07	Discuss post-surgical changes and its effects on images.
22.08	Demonstrate knowledge and understanding of the role of the sonographer in performing interventional/invasive procedures.
23.0	Apply accumulated knowledge to the process of creating diagnostic sonograms. – The student will be able to:
23.01	Complete in all aspects a diagnostic sonogram with emphasis on:
23.01.01	patient identification
23.01.02	patient interaction
23.01.03	professionalism
23.01.04	creation of an optimized sonogram
23.01.05	appropriate image annotation
23.01.06	safety
23.01.07	recognition of anatomy, both normal and pathologic.
23.02	Complete routine documentation associated with a typical ultrasound department.
23.03	Present a sonographic exam to the interpreting physician in completed form.
24.0	Apply skills needed to complete diagnostic images of high quality from a variety of scanning units. – The student will be able to:
24.01	Perform complete and diagnostic examinations of the abdomen, superficial structures, pelvis and obstetrical patient using real-time and Doppler techniques using a variety of ultrasound machines.
24.02	Present completed examinations in detail with justification of all techniques, methods and procedures used to obtain data.
24.03	Identify gross pathology of the abdomen, pelvis and obstetrical patient, both on sonograms and related imaging modalities.
24.04	Perform all preliminary procedures leading to actual examination by Sonography and all procedures necessary post examination.
24.05	Demonstrate skills needed to relate with tact and diplomacy with patients, physicians, nurses, other imaging personnel, and the general hospital population.
24.06	Demonstrate those characteristics that reflect the high degree of professionalism associated with the field of ultrasound.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program should meet the requirements of:

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
361 Park St.  
Clearwater, FL 33756  
(727) 210-2350

Written clinical affiliation agreements must be maintained with each health care facility. Health care facilities must be accredited by The Joint Commission.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e. radiologic technology, nursing-RN, etc.). Upon the successful completion of the program the student will receive a Diagnostic Medical Sonography Specialist Certificate.

Students completing this program may apply to take one or both of the national registry examinations to obtain certification, for further information contact:

American Registry of Diagnostic  
Medical Sonographers (ARDMS)  
51 Monroe St. Plaza East 1  
Rockville, Maryland 20850-2400  
(301) 738-8401



Or

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

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Florida Department of Education  
Curriculum Framework

**Program Title:** Endoscopic Technician  
**Career Cluster:** Health Science

CCC	
CIP Number	0351099902
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

**Purpose**

This certificate program is part of the Surgical Services AS degree program (1351000002).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as an Endoscopic Technician (SOC31-9099).

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care endoscopy procedures, endoscopy procedures, patient safety, use and care of equipment and supplies, CPR, Heart saver, employability skills, basic computer literacy and endoscopic technician duties such as disinfection and processing endoscopic instruments, completing the setup and assisting during the endoscopy procedures, assisting with patient positioning and splinting as indicated, transportation of patients, and manage the endoscopy accessories, related supplies and equipment.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate language arts knowledge and skills.
- 13.0 Solve problems using critical thinking skills, creativity and innovation.
- 14.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
- 15.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 16.0 Demonstrate central supply technician skills.
- 17.0 Demonstrate competencies in the core components of the endoscopy technician related to communication and interpersonal Skills.
- 18.0 Demonstrate an understanding of the basic sciences related to endoscopy.
- 19.0 Describe and practice safety measures in the endoscopy environment.
- 20.0 Perform patient care endoscopy procedures related to the endoscopy environment and describe methods for meeting patient's needs.
- 21.0 Demonstrate knowledge of the basic endoscopy skills necessary to function safely and effectively.
- 22.0 Demonstrate competencies in the core components of the endoscopy technician related to knowledge and skills.
- 23.0 Demonstrate competencies in the core components of the endoscopy technician related to legal and ethical responsibilities.

Florida Department of Education  
Student Performance Standards

**Program Title:** Endoscopic Technician  
**CIP Number:** 0351099902  
**Program Length:** 24 credit hours  
**SOC Code(s):** 31-9099

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of Surgical Services AS degree program (1351000002). At the completion of this program, the student will be able to:**

**Students completing intended outcomes 12-23, in addition to the health careers core, will meet the requirements of the Endoscopic Technician-CCC (SOC Code 31-9099).**

12.0	Demonstrate language arts knowledge and skills. – The students will be able to:
12.01	Locate, comprehend and evaluate key elements of oral and written information.
12.02	Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
12.03	Present information formally and informally for specific purposes and audiences.
13.0	Solve problems using critical thinking skills, creativity, and innovation. – The students will be able to:
13.01	Employ critical thinking skills independently and in teams to solve problems and make decisions.
13.02	Employ critical thinking and interpersonal skills to resolve conflicts.
13.03	Identify and document workplace performance goals and monitor progress toward those goals.
13.04	Conduct technical research to gather information necessary for decision-making.
14.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. – The students will be able to:

14.01	Describe the nature and types of healthcare organizations.
14.02	Explain the effect of key organizational systems on performance and quality.
14.03	List and describe quality control systems and/or practices common to the workplace.
14.04	Explain the impact of the global economy on healthcare organizations.
15.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
15.01	Employ leadership skills to accomplish organizational goals and objectives.
15.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
15.03	Conduct and participate in meetings to accomplish work tasks.
15.04	Employ mentoring skills to inspire and teach others.
15.05	Analyze attributes and attitudes of an effective leader.
15.06	Recognize factors and situations that may lead to conflict.
15.07	Demonstrate effective techniques for managing team conflict.
16.0	Demonstrate central supply technician skills. -- The student will be able to:
16.01	Apply the principles of medical and sterile asepsis to the processing and use of instruments, equipment, and supplies.
16.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
16.03	Inspect equipment and supplies for condition and quantity.
16.04	Identify principles and demonstrate techniques of disinfection and sterilization.
16.05	Decontaminate instruments, equipment and environment.
16.06	Identify/correct and/or report package integrity.
16.07	Replenish supplies and equipment.
16.08	Identify instruments, equipment and supplies for any procedure.
16.09	Demonstrate the ability to label, package goods and supplies as required.
16.10	Demonstrate various storage, case cart preparation and supply distribution methods for instruments, equipment, and supplies.

16.11	Describe the types and use of inventory control systems.
17.0	Demonstrate competencies in the core components of the endoscopy technician related to communication and interpersonal skills. -- The student will be able to:
17.01	Use various forms of communication in the role of Endoscopy Technician to communicate relevant, accurate and complete information in a concise and clear manner.
17.02	Collaborate with the patient, physician, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's endoscopy care to promote positive outcomes.
17.03	Demonstrate proper use of communication technology including but not limited to intercoms, computers, written documentation logs and paging systems.
17.04	Demonstrate patient interviewing techniques.
17.05	Facilitate teamwork as a patient advocate and assistant to the physician.
17.06	Demonstrate competency regarding reporting and documentation responsibilities.
18.0	Demonstrate an understanding of the basic sciences related to endoscopy. -- The student will be able to:
18.01	Apply knowledge of the microbial environment to the care of the patient.
18.02	Relate anatomy, physiology and pathophysiology, to endoscopy procedures.
18.03	Apply the principles of medical and surgical asepsis to endoscopy procedures performed.
18.04	Discuss electricity, computers, and robotics as they relate to endoscopy procedures performed.
18.05	Apply knowledge of the pharmacologic agents used in the treatment of the endoscopy patient.
19.0	Describe and practice safety measures in the endoscopy environment. -- The student will be able to:
19.01	Inspect equipment and supplies for condition and quantity.
19.02	Implement appropriate Joint Commission patient safety goals.
19.03	Apply knowledge of endoscopy hazards to safe patient care.
20.0	Perform patient care endoscopy procedures related to the endoscopy environment and describe methods for meeting patient's needs. -- The student will be able to:
20.01	Perform safe patient transfer/transportation techniques used in the endoscopy unit setting.
20.02	Apply the principles of safe positioning and restraining patient for endoscopy procedures.
20.03	Apply the principles of safe usage of the electrosurgical unit, laser, endoscopes, and other equipment utilized.
20.04	Identify the roles of the members of the endoscopy team during each phase of endoscopy procedures.

20.05	Assist the surgical team with the care of the endoscopy patient.
20.06	Apply the principles of patient assessment and preparation.
20.07	Describe the perioperative techniques, methods and management of anesthesia related to the type of endoscopy procedure.
20.08	Apply knowledge of endoscopy assisting techniques such as splinting and assisting with specimens.
21.0	Demonstrate knowledge of the basic endoscopy skills necessary to function safely and effectively. -- The student will be able to:
21.01	Demonstrate an understanding of the gastrointestinal system, respiratory system and relevant disease processes.
21.02	Select instruments, equipment and supplies for endoscopy procedures using physician preference/procedure cards.
21.03	Measure and pour sterile solutions and medications.
21.04	Differentiates appropriately the use of medical sterile technique regarding the donning of sterile gloves and the use of instruments, supplies and equipment for the scenario given.
21.05	Describes the principles of positioning, draping patient, passing instruments, monitoring field, and manipulation of scope.
21.06	Demonstrates the preparation and/or updates procedure cards to meet a specific surgeon's preferences correctly.
22.0	Demonstrate competencies in the core components of the endoscopy technician related to knowledge and skills. -- The student will be able to:
22.01	Prioritize care or actions to be taken in a given circumstance to expedite the procedure or emergency situation.
22.02	Describe preoperative diagnosis, common complications, and operative pathophysiology related to the specific endoscopy procedures performed.
22.03	Describe and apply common patient diagnostic and monitoring devices as applicable to the endoscopy specialty.
22.04	Assist the surgical team with preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, draping, and setup preparation.
22.05	Identify gross anatomical structures correctly during endoscopy procedures.
22.06	Demonstrate appropriate tissue handling techniques including the care of the endoscopy specimens.
22.07	Describe the appropriate sequence for common endoscopy procedures.
22.08	Utilize appropriate techniques to assist with facilitating visualization.
22.09	Demonstrate appropriate safe endoscopy techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known endoscopy hazard.
22.10	Select appropriate instruments, equipment and supplies for the procedure.
22.11	Demonstrate competence with technology including the use of instruments, equipment, and supplies for the endoscopy procedure.

22.12	Assist the surgical team with postoperative care of the patient to facilitate proper patient care.
22.13	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, endoscopy misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and injury.
22.14	Facilitate the continuity of care within the healthcare setting to access available resources and services.
23.0	Demonstrate competencies in the core components of the endoscopy technician related to legal and ethical responsibilities. -- The student will be able to:
23.01	State methods, standards and aids that assist an Endoscopy Technician with interpreting and following legal responsibilities.
23.02	Explain the job requirements.
23.03	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as an endoscopy technician, and the professional skills necessary to fulfill the role.
23.04	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health

The Endoscopy Technician Core Curriculum should be taught by qualified staff including but not limited to physicians, registered nurses, certified endoscopic technicians and experienced endoscopic technicians.

Entering students who have successfully completed the program 51-3902, Nursing Assistant or currently Nationally Certified as a CNA (Certified Nursing Assistant), should be given appropriate advanced standing.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Clinical Laboratory Technician  
**Program Type:** ATD (Applied Technology Diploma)  
**Career Cluster:** Health Science

	College Credit	Clock Hour Program
Program Number	N/A	H170600
CIP Number	0351100401	0351100404
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	40 credit hours	1515 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2012 Medical and Clinical Laboratory Technicians 31-9099 Healthcare Support Workers, All Other 31-9097 Phlebotomists	29-2012 Medical and Clinical Laboratory Technicians 31-9099 Healthcare Support Workers, All Other 31-9097 Phlebotomists
Basic Skills Level:	N/A	Mathematics 10 Language: 11 Reading 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to didactic and laboratory performance of routine procedures in hematology, immunology, urinalysis, immunohematology, microbiology and clinical chemistry including the use of common laboratory instruments. A clinical component is a necessary element of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Program Structure**

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as clock hour credit, with college credit awarded to a student upon articulation to a state college.

## **Career Certificate Program**

When offered at the district level, this program is a planned sequence of instruction consisting of 3 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	90 hours	31-9099
B	MEA0520	Phlebotomist	75 hours	31-9097
C	MLT0009	Introduction to Medical laboratory Technology	90 hours	29-2012
	MLT0220	Urinalysis and Body Fluids	135 hours	
	MLT0335	Hematology and Hemostasis	280 hours	
	MLT0505	Immunology	60 hours	
	MLT0640	Clinical Chemistry	255 hours	
	MLT0520	Immunochemistry	255 hours	
	MLT0450	Microbiology and Parasitology	275 hours	

## **College Credit**

When offered at the college credit level, this ATD program is part of the Medical Laboratory Technology AS program (1351100405) and has a program length of 40 credits.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills.
- 13.0 Discuss phlebotomy in relation to the health care setting.
- 14.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
- 15.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 16.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 17.0 Practice infection control following standard precautions.
- 18.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 19.0 Practice quality assurance and safety.
- 20.0 Demonstrate knowledge and use of basic laboratory equipment and techniques.
- 21.0 Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).
- 22.0 Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.
- 23.0 Discuss the general responsibilities and functions encountered by a medical technician.
- 24.0 Apply quality assurance principles and safety protocols.
- 25.0 Demonstrate knowledge of the operation of computer systems.
- 26.0 Demonstrate an understanding of the basic principles of molecular diagnostics.
- 27.0 Demonstrate knowledge of urinalysis and body fluids principles and procedures.
- 28.0 Demonstrate knowledge of hematological principles and procedures.
- 29.0 Demonstrate knowledge of hemostasis and related diagnostic principles and procedures.
- 30.0 Demonstrate knowledge of immunology principles and procedures.
- 31.0 Demonstrate knowledge of clinical chemistry principles and procedures.
- 32.0 Demonstrate knowledge of immunohematology principles and procedures.
- 33.0 Demonstrate knowledge of microbiological principles and procedures.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Clinical Laboratory Technician-ATD  
Career Certificate Program Number: H170600**

When this program is offered at the Career Certificate Program level, the following organization of courses, standards, and benchmarks apply.

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Career Certificate Program Course Number: MEA0520  
Occupational Completion Point: B  
Phlebotomist – 75 Hours – SOC Code 31-9097**

12.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01	Demonstrate the appropriate professional behavior of a phlebotomist.
12.02	Explain to the patient the procedure to be used in specimen collection.
12.03	Explain in detail the importance of identifying patients correctly when drawing blood.
12.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05	List and describe professional organizations that provide accreditation for phlebotomy programs and provide certifications for phlebotomists.
12.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
13.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.

13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
14.01	Describe and define major body systems with emphasis on the circulatory system.
14.02	List and describe the main superficial veins used in performing venipuncture.
14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
14.05	Compare and contrast between serum and plasma as it relates to blood collection.
14.06	Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
15.03	Identify and discuss proper use of supplies used in collecting micro-specimens.
15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
15.05	Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
16.01	Follow approved procedure for completing a laboratory requisition form.
16.02	Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.
16.03	Demonstrate knowledge of established protocol for patient and specimen identification.
16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.

16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
16.06	Know how to perform venipuncture by evacuated tube, butterfly and syringe systems.
16.07	Describe the correct order of draw according to CLSI guidelines.
16.08	Describe the use of barcoding systems used for positive patient identification and specimen identification.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term "hospital acquired infection".
17.02	Demonstrate proper hand hygiene.
17.03	Comply with universal/standard precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:



19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
19.02	Demonstrate knowledge of and practice appropriate patient safety.
19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.
19.04	Follow documentation procedures for work related accidents.
19.05	Understand Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.

<b>Career Certificate Program Course Number: MLT0009</b>	
<b>Occupational Completion Point: C</b>	
<b>Introduction to Medical Laboratory Technology – 90 Hours – SOC Code 29-2012</b>	
20.0	Demonstrate knowledge and use of basic laboratory equipment and techniques. – The student will be able to:
20.01	Identify the parts of the microscope and explain the function of each.
20.02	Demonstrate the proper technique for operation of the microscope.
20.03	Demonstrate use of standard laboratory equipment including glassware, pipettes and centrifuge.
20.04	Perform basic laboratory math calculations.
20.05	Understand the principles of quality assurance to correct problems encountered in monitoring daily quality control.
20.06	Evaluate laboratory findings to confirm results according to standard operating procedure.
20.07	Demonstrate knowledge of principles and operation of laboratory instruments.
21.0	Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived). -- The student will be able to:
21.01	Demonstrate the ability to interpret instructions of point of care testing including, but not limited to the following:
21.01.1	Test principle
21.01.2	Storage & Stability
21.01.3	Internal vs. External Quality Control
21.01.4	Specimen collection & preparation
21.01.5	Directions for use
21.01.6	Interpretation of results
21.01.7	Interfering substances
21.02	Explain the purpose of lot to lot correlations.

21.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.
21.04	Understand the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.
22.0	Demonstrate basic knowledge of and perform Point of Care(POC) Testing using CLIA approved Waived instrumentation.-- The student will be able to:
22.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.
22.02	Perform instrument maintenance.
22.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.
22.04	Identify normal limits and associate abnormal results with disease or disorders.
22.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.
23.0	Discuss the general responsibilities and functions encountered by a medical technician. – The students will be able to:
23.01	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
23.02	Communicate laboratory results to healthcare professionals.
23.03	Demonstrate ability to evaluate laboratory results.
23.04	Demonstrate ability to report laboratory results in written or oral form.
23.05	Discuss the licensure and certification requirements of the major classifications of clinical laboratory personnel.
24.0	Apply quality assurance principles and safety protocols. – The student will be able to:
24.01	Assess specimen acceptability using standard operating procedure including rejection/recollection criteria.
24.02	Describe procedures for transporting and processing specimens.
24.03	Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance of equipment.
24.04	Understand the need for calibration of laboratory equipment.
24.05	Demonstrate and record quality control procedures required for the tests performed and recognize unacceptable results.
24.06	Report identified problems encountered in daily quality control according to standard operating procedures.
24.07	Comply with current OSHA regulations regarding laboratory hazards.
25.0	Demonstrate knowledge of the operation of computer systems.– The student will be able to:

25.01	Discuss the role of computer systems in laboratory data management.
25.02	Demonstrate knowledge of common computer terminology.
25.03	Demonstrate entry level computer operations for specimen accessioning, data reporting, and quality control recording.
25.04	Demonstrate entry level operational skills in the use of computer-interfaced analytical instrumentation.
26.0	Demonstrate an understanding of the basic principles of molecular diagnostics. – The student will be able to:
26.01	Discuss the principles and major steps of the polymerase chain reaction (PCR).
26.02	Label the organelles and important parts of a eukaryotic animal cell.
26.03	Describe the function of the organelles and important parts of a eukaryotic animal cell.
26.04	Discuss the structure, function, and components of DNA and RNA.
26.05	Define the key terms of molecular diagnostics.
26.06	Understand the principles of molecular diagnostic testing.
26.07	Compare the advantages and disadvantages of molecular techniques over traditional diagnostic tests for infectious diseases.
26.08	List molecular tests associated with the identification of microorganisms.
26.09	Identify the types of samples appropriate for molecular diagnostics.
<b>Career Certificate Program Course Number: MLT0220</b>	
<b>Occupational Completion Point: C</b>	
<b>Urinalysis and Body Fluids – 135 Hours – SOC Code 29-2012</b>	
27.0	Demonstrate knowledge of urinalysis and body fluids principles and procedures. – The student will be able to:
27.01	Identify the components of the urinary system and explain their functions.
27.02	Discuss diseases affecting the urinary system.
27.03	Describe collection, transport and storage procedures for random and timed urine specimens.
27.04	Discuss specific gravity techniques; calibration and use of the refractometer.
27.05	Perform dipstick or tablet (non-automated) urinalysis techniques for chemical exam of the urine and interpret results.
27.06	Demonstrate the proper use of automated urinalysis analyzers.
27.07	Describe renal function tests.

27.08	Describe principles of and perform routine physical and chemical analyses on urine.
27.09	Prepare urine sediments and perform identification and quantitation of microscopic formed elements.
27.10	Correlate abnormal physical, chemical and microscopic urine results with associated pathological conditions.
27.11	Differentiate between transudates and exudates.
27.12	Discuss miscellaneous body fluids to include cerebral spinal, serous, seminal and joint fluids.
27.13	Perform physical, chemical and microscopic evaluations of common body fluids.
<b>Career Certificate Program Course Number: MLT0335: Occupational Completion Point: C Hematology and Hemostasis – 280 Hours – SOC Code 29-2012</b>	
28.0	Demonstrate knowledge of hematological principles and procedures. – The student will be able to:
28.01	Discuss the organs, cells and cellular interaction of the lymphoid, myeloid and reticuloendothelial systems.
28.02	Demonstrate an understanding of basic concepts of hematopoiesis.
28.03	Identify the components of blood.
28.04	Discuss the function of formed elements of blood.
28.05	Demonstrate an understanding of the synthesis of normal and abnormal molecular structure of hemoglobin, common hemoglobinopathies, and associated tests.
28.06	Describe normal hemoglobin-oxygen function using the Oxygen Dissociation Curve (ODC).
28.07	Discuss assessment and impact of preanalytical, analytical and post-analytical factors on hematology testing.
28.08	Calculate red blood cell indices.
28.09	Discuss selected cytochemical staining and flowcytometry procedures.
28.10	Evaluate red blood cell morphology.
28.11	State the review process of histogram/scatterplot/scattergram analysis.
28.12	Describe the categories used in a morphological classification of anemias.
28.13	Correlate complete blood cell results with peripheral exam of blood smear.
28.14	List the white blood cell maturation sequence and identify distinguishing morphology for stages of developing white blood cells.

28.15	Discuss normal and abnormal hematology findings, reference ranges and associated diseases.
28.16	Demonstrate an understanding of normal and abnormal white cell morphology, related disease states, and associated tests.
28.17	Discuss the principles of and perform routine hematology procedures applying quality control procedures.as necessary.
28.18	Perform commonly used methods to evaluate leukocytes, correlate and verify automated cell counts with established criteria.
28.19	Identify characteristic findings of nonmalignant leukocytic disorders, e.g. shift to the left, toxic granulation, Döhle bodies, etc.
28.20	Perform techniques of manual blood smear evaluation including white blood cell differential, red cell and platelet morphology.
28.21	Correlate peripheral blood evaluation with automated cell analysis.
28.22	Perform platelet counts on patient and control specimens using manual and automated techniques and correlate counts with peripheral smear.
29.0	Demonstrate knowledge of hemostasis and related diagnostic principles and procedures. – The student will be able to:
29.01	Discuss and define the mechanisms of hemostasis including bleeding and clotting.
29.02	Discuss common coagulopathies and associated treatments.
29.03	Discuss assessment and impact of preanalytical factors on hemostasis testing.
29.04	Describe the principles of and perform routine testing used in the evaluation of primary and secondary hemostasis.
29.05	Discuss additional hemostasis tests performed to differentiate the cause of abnormal routine tests.
<b>Career Certificate Program Course Number: MLT0505</b>	
<b>Occupational Completion Point: C</b>	
<b>Immunology – 60 Hours – SOC Code 29-2012</b>	
30.0	Demonstrate knowledge of immunology principles and procedures. – The student will be able to:
30.01	Discuss the functions of the cells of the immune system, cytokines and regulatory molecules.
30.02	Discuss physical and chemical properties of immunogens (antigens), immunoglobulins (antibodies) and complement
30.03	Compare and contrast the principles of basic agglutination, flocculation and precipitation procedures in immunology/serology.
30.04	Perform basic procedures in immunology/serology.
30.05	Discuss principles of serum protein electrophoresis and immunofixation.
30.06	Discuss the clinical significance of the commonly performed immunological tests.
30.07	Discuss selected serological tests such as immunoassays.

**Career Certificate Program Course Number: MLT0640**  
**Occupational Completion Point: C**  
**Clinical Chemistry – 255 Hours – SOC Code 29-2012**

31.0 Demonstrate knowledge of clinical chemistry principles and procedures. – The student will be able to:

31.01 Identify the chemistry analytes used to evaluate various organ function.

31.02 Discuss the renal system and related analytes.

31.03 Discuss principles of and perform common renal function tests.

31.04 Discuss carbohydrate, protein and lipid metabolism.

31.05 Discuss principles of and perform commonly ordered tests related to carbohydrate, protein and lipid metabolism.

31.06 Discuss the liver and its functions and related analytes.

31.07 Discuss principles of and perform commonly ordered liver function tests.

31.08 Discuss enzyme classification, origin, activity and function.

31.09 Discuss principles of and perform commonly ordered enzyme procedures.

31.10 Discuss electrolyte balance as related to health and disease.

31.11 Discuss principles of and perform electrolyte analyses.

31.12 Discuss principles of and perform commonly ordered tests to evaluate cardiac function.

31.13 Discuss the physiology of the endocrine system and the principal tests used to evaluate endocrine function.

31.14 Discuss the role of the laboratory in therapeutic drug monitoring and toxicology.

31.15 Discuss and perform general electrophoresis techniques.

31.16 Discuss the clinical significance of commonly ordered clinical chemistry tests.

31.17 Demonstrate knowledge of principles of instrumentation as related to the clinical chemistry laboratory.

31.18 Discuss techniques of clinical chemistry related to standardization of procedure and use of standards and controls.

31.19 Discuss other techniques of clinical chemistry.

31.20 Discuss basic techniques of clinical chemistry related to normal and abnormal physiology.

**Career Certificate Program Course Number: MLT0520**  
**Occupational Completion Point: C**

**Immunohematology – 255 Hours – SOC Code 29-2012**

32.0 Demonstrate knowledge of immunohematology principles and procedures. – The student will be able to:

32.01 Discuss donor interview, criteria for selection, phlebotomy preparation, and donor blood processing.

32.02 Discuss blood component collection and, preparation, storage, and use.

32.03 Describe the roles of FDA, AABB, and state agencies and how to contact each.

32.04 Compare advantages and disadvantages for autologous, versus homologous (allogenic) blood collection, and transfusion.

32.05 Discuss basic genetics of the blood group antigens

32.06 Discuss the ABO blood group systems testing procedures and recognize ABO discrepancies.

32.07 Describe required tests on recipient blood samples.

32.08 Discuss and differentiate other blood group systems such as Duffy, Kell, Kidd, S,s, Lu and the common cold-reacting antibodies such as Le, P, I, M and N.

32.09 Perform Rh testing to determine Rh phenotypes.

32.10 Perform and interpret antibody screening.

32.11 Perform antibody identification tests to detect clinically significant antibodies.

32.12 Discuss the safety and determine compatibility of blood components for transfusion.

32.13 Discuss and perform routine compatibility testing including the immediate spin crossmatch and the electronic crossmatch.

32.14 Discuss and perform phenotyping on recipient and donor specimens.

32.15 Identify symptoms of the suspected transfusion reaction and the required laboratory work-up.

32.16 Discuss immune hemolytic disorders and perform the direct antiglobulin test.

32.17 Discuss specialized techniques.

32.18 Perform quality control (QC) on reagents.

32.19 Describe the pathophysiology of hemolytic disease of the fetus and newborn.

**Career Certificate Program Course Number: MLT0450**

**Occupational Completion Point: C**

**Microbiology and Parasitology – 275 Hours – SOC Code 29-2012**

33.0 Demonstrate knowledge of microbiological principles and procedures. – The student will be able to:

33.01	Discuss microbial taxonomy and nomenclature.
33.02	Discuss bacterial metabolism, reproduction, cell structures, and their functions.
33.03	Discuss classification, composition and preparation of culture media.
33.04	Discuss the human pathogenesis of bacteria.
33.05	Discuss and perform sterilization techniques.
33.06	Perform culturing techniques for urine, stool, wound, respiratory, body fluids, and blood specimens.
33.07	Perform techniques of microbiology related to inoculation and transfer of cultures.
33.08	Discuss the principles of Gram and AFB stains.
33.09	Accurately perform, read and report gram stains.
33.10	Perform techniques necessary for isolation and identification of aerobic and anaerobic bacterial organisms.
33.11	Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
33.12	Perform and interpret antimicrobial susceptibility tests.
33.13	Discuss collection and handling of specimens for fungal, mycobacterial and viral culture.
33.14	Prepare and examine specimens, and identify ova and parasites when present.



**Florida Department of Education  
Student Performance Standards**

**Program Title:** Medical Clinical Laboratory Technician - ATD  
**ATD CIP Number:** 0351100401  
**SOC Code(s):** 31-9099, 31-9097, 29-2012

When this program is offered at the college level, the following standards and benchmarks apply:

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Phlebotomy: (12-19)</b>	
12.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01	Demonstrate the appropriate professional behavior of a phlebotomist.
12.02	Explain to the patient the procedure to be used in specimen collection.
12.03	Explain in detail the importance of identifying patients correctly when drawing blood.
12.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05	List and describe professional organizations that provide accreditation for phlebotomy programs and provide certification for phlebotomists.
12.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
13.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.
13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).

14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
14.01	Describe and define major body systems with emphasis on the circulatory system.
14.02	List and describe the main superficial veins used in performing venipuncture.
14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
14.05	Compare and contrast between serum and plasma as it relates to blood collection.
14.06	Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
15.03	Identify and discuss proper use of supplies used in collecting micro-specimens.
15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
15.05	Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
16.01	Follow approved procedure for completing a laboratory requisition form.
16.02	Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.
16.03	Demonstrate knowledge of established protocol for patient and specimen identification.
16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
16.06	Know how to perform venipuncture by evacuated tube, butterfly and syringe systems.
16.07	Describe the correct order of draw according to CLSI guidelines.

16.08	Describe the use of barcoding systems used for positive patient identification and specimen identification.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term "hospital acquired infection".
17.02	Demonstrate proper hand hygiene.
17.03	Comply with universal/standard precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:
19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
19.02	Demonstrate knowledge of and practice appropriate patient safety.
19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.

19.04	Follow documentation procedures for work related accidents.
19.05	Understand Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.
<b>Medical Laboratory Technician: (20-33)</b>	
20.0	Demonstrate knowledge and use of basic laboratory equipment and techniques. – The Student will be able to:
20.01	Identify the parts of the microscope and explain the function of each.
20.02	Demonstrate the proper technique for operation of the microscope.
20.03	Demonstrate use of standard laboratory equipment including glassware, pipettes and centrifuge.
20.04	Perform basic laboratory math calculations.
20.05	Understand the principles of quality assurance to correct problems encountered in monitoring daily quality control.
20.06	Evaluate laboratory findings to confirm results according to standard operating procedure.
20.07	Demonstrate knowledge of principles and operation of laboratory instruments.
21.0	Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived). -- The student will be able to
21.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:
21.01.1	Test principle
21.04.2	Storage & Stability
21.04.3	Internal vs. External Quality Control
21.04.4	Specimen collection & preparation
21.04.5	Directions for use
21.04.6	Interpretation of results
21.01.7	Interfering substances
21.02	Explain the purpose of performing lot to lot correlations.
21.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.
21.04	Understand the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.

22.0	Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation. -- The student will be able to:
22.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.
22.02	Perform instrument maintenance.
22.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.
22.04	Identify normal limits and associate abnormal results with disease or disorders.
22.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.
23.0	Discuss the general responsibilities and functions encountered by a medical technician. – The students will be able to:
23.01	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
23.02	Communicate laboratory results to healthcare professionals.
23.03	Demonstrate ability to evaluate laboratory results.
23.04	Demonstrate ability to report laboratory results in written or oral form.
23.05	Discuss the licensure and certification requirements of the major classifications of clinical laboratory personnel.
24.0	Apply quality assurance principles and safety protocols. – The student will be able to:
24.01	Assess specimen acceptability using standard operating procedure including rejection/recollection criteria.
24.02	Describe procedures for transporting and processing specimens.
24.03	Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance of equipment.
24.04	Understand the need for calibration of laboratory equipment.
24.05	Demonstrate and record quality control procedures required for the tests performed and recognize unacceptable results.
24.06	Report identified problems encountered in daily quality control according to standard operating procedures.
24.07	Comply with current OSHA regulations regarding laboratory hazards.
25.0	Demonstrate knowledge of the operation of computer systems. – The student will be able to:
25.01	Discuss the role of computer systems in laboratory data management.
25.02	Demonstrate knowledge of common computer terminology.

25.03	Demonstrate entry level computer operations for specimen accessioning, data reporting, and quality control recording.
25.04	Demonstrate entry level operational skills in the use of computer-interfaced analytical instrumentation.
26.0	Demonstrate an understanding of the basic principles of molecular diagnostics. – The student will be able to:
26.01	Discuss the principles and major steps of the polymerase chain reaction (PCR).
26.02	Label the organelles and important parts of a eukaryotic animal cell.
26.03	Describe the function of the organelles and important parts of a eukaryotic animal cell.
26.04	Discuss the structure, function, and components of DNA and RNA.
26.05	Define the key terms of molecular diagnostics.
26.06	Understand the principles of molecular diagnostic testing.
26.07	Compare the advantages and disadvantages of molecular techniques over traditional diagnostic tests for infectious diseases.
26.08	List molecular tests associated with the identification of microorganisms.
26.09	Identify the types of samples appropriate for molecular diagnostics.
26.10	Discuss the ethical impact of genetic technologies.
26.11	Outline requirements for reducing contamination in a molecular lab.
26.12	Discuss nucleic acid probes and their role in clinical laboratory diagnostics.
27.0	Demonstrate knowledge of urinalysis and body fluids principles and procedures. – The student will be able to:
27.01	Identify the components of the urinary system and explain their functions.
27.02	Discuss diseases affecting the urinary system.
27.03	Describe collection, transport and storage procedures for random and timed urine specimens.
27.04	Discuss specific gravity techniques; calibration and use of the refractometer.
27.05	Perform dipstick or tablet (non-automated) urinalysis techniques for chemical exam of the urine and interpret results.
27.06	Demonstrate the proper use of automated urinalysis analyzers.
27.07	Describe renal function tests.

27.08	Describe principles of and perform routine physical and chemical analyses on urine.
27.09	Prepare urine sediments and perform identification and quantitation of microscopic formed elements.
27.10	Correlate abnormal physical, chemical and microscopic urine results with associated pathological conditions.
27.11	Differentiate between transudates and exudates.
27.12	Discuss miscellaneous body fluids to include cerebral spinal, serous, seminal and joint fluids.
27.13	Perform physical, chemical and microscopic evaluations of common body fluids.
28.0	Demonstrate knowledge of hematological principles and procedures. – The student will be able to:
28.01	Discuss the organs, cells and cellular interaction of the lymphoid, myeloid and reticuloendothelial systems.
28.02	Demonstrate an understanding of basic concepts of hematopoiesis.
28.03	Identify the components of blood.
28.04	Discuss the function of formed elements of blood.
28.05	Demonstrate an understanding of the synthesis of normal and abnormal molecular structure of hemoglobin, common hemoglobinopathies, and associated tests.
28.06	Describe normal hemoglobin-oxygen function using the Oxygen Dissociation Curve (ODC).
28.07	Discuss assessment and impact of preanalytical, analytical and post-analytical factors on hematology testing.
28.08	Calculate red blood cell indices.
28.09	Discuss selected cytochemical staining and flowcytometry procedures.
28.10	Evaluate red blood cell morphology.
28.11	State the review process of histogram/scatterplot/scattergram analysis.
28.12	Describe the categories used in a morphological classification of anemias.
28.13	Correlate complete blood cell results with peripheral exam of blood smear.
28.14	List the white blood cell maturation sequence and identify distinguishing morphology for stages of developing white blood cells.
28.15	Discuss normal and abnormal hematology findings, reference ranges and associated diseases.
28.16	Demonstrate an understanding of normal and abnormal white cell morphology, related disease states and associated tests.

28.17	Discuss the principles of and perform routine hematology procedures applying quality control procedures.as necessary.
28.18	Perform commonly used methods to evaluate leukocytes, correlate and verify automated cell counts with established criteria.
28.19	Identify characteristics findings of nonmalignant leukocytic disorders, e.g. shift to the left, toxic granulation, Döhle bodies, etc.
28.20	Perform techniques of manual blood smear evaluation including white blood cell differential, red cell and platelet morphology.
28.21	Correlate peripheral blood evaluation with automated cell analysis.
28.22	Perform platelet counts on patient and control specimens using manual and automated techniques and correlate counts with peripheral smear.
29.0	Demonstrate knowledge of hemostasis and related diagnostic principles and procedures. – The student will be able to:
29.01	Discuss and define the mechanisms of hemostasis including bleeding and clotting.
29.02	Discuss common coagulopathies and associated treatments.
29.03	Discuss assessment and impact of preanalytical factors on hemostasis testing.
29.04	Describe the principles of and perform routine testing used in the evaluation of primary and secondary hemostasis.
29.05	Discuss additional hemostasis tests performed to differentiate the cause of abnormal routine tests.
30.0	Demonstrate knowledge of immunology principles and procedures. – The student will be able to:
30.01	Discuss the functions of the cells of the immune system, cytokines and regulatory molecules.
30.02	Discuss physical and chemical properties of immunogens (antigens), immunoglobulins (antibodies) and complement.
30.03	Compare and contrast the principles of basic agglutination, flocculation and precipitation procedures in immunology/serology.
30.04	Perform basic procedures in immunology/serology.
30.05	Discuss principles of serum protein electrophoresis and immunofixation.
30.06	Discuss the clinical significance of the commonly performed immunological tests.
30.07	Discuss selected serological tests such as immunoassays.
31.0	Demonstrate knowledge of clinical chemistry principles and procedures. – The student will be able to:
31.01	Identify the chemistry analytes used to evaluate various organ function.
31.02	Discuss the renal system and related analytes.



31.03	Discuss principles of and perform common renal function tests.
31.04	Discuss carbohydrate, protein and lipid metabolism.
31.05	Discuss principles of and perform commonly ordered tests related to carbohydrate, protein and lipid metabolism.
31.06	Discuss the liver and its functions and related analytes.
31.07	Discuss principles of and perform commonly ordered liver function tests.
31.08	Discuss enzyme classification, origin, activity and function.
31.09	Discuss principles of and perform commonly ordered enzyme procedures.
31.10	Discuss electrolyte balance as related to health and disease.
31.11	Discuss principles of and perform electrolyte analyses.
31.12	Discuss principles of and perform commonly ordered tests to evaluate cardiac function.
31.13	Discuss the physiology of the endocrine system and the principal tests used to evaluate endocrine function.
31.14	Discuss the role of the laboratory in therapeutic drug monitoring and toxicology.
31.15	Discuss and perform general electrophoresis techniques.
31.16	Discuss the clinical significance of commonly ordered clinical chemistry tests.
31.17	Demonstrate knowledge of principles of instrumentation as related to the clinical chemistry laboratory.
31.18	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.
31.19	Discuss other techniques of clinical chemistry related to visual colorimetry; calibration and use of the spectrophotometer.
31.20	Discuss basic techniques of clinical chemistry related to normal and abnormal physiology.
32.0	Demonstrate knowledge of immunohematology principles and procedures. – The student will be able to:
32.01	Discuss donor interview, criteria for selection, phlebotomy preparation, and donor blood processing.
32.02	Discuss blood component collection and, preparation, storage and use.
32.03	Describe the roles of FDA, AABB, and state agencies and how to contact each.
32.04	Compare advantages and disadvantages for autologous, versus homologous (allogenic) blood collection and transfusion.

32.05	Discuss basic genetics of the blood group antigens.
32.06	Discuss the ABO blood group system testing procedures and recognize ABO discrepancies.
32.07	Describe required tests on recipient blood samples.
32.08	Discuss and differentiate other blood group systems such as Duffy, Kell, Kidd, S,s, Lu and the common cold-reacting antibodies such as Le, P, I, M, and N.
32.09	Perform Rh testing to determine Rh phenotypes.
32.10	Perform and interpret antibody screening.
32.11	Perform antibody identification tests to detect clinically significant antibodies.
32.12	Discuss the safety and determine compatibility of blood components for transfusion.
32.13	Discuss and perform routine compatibility testing including the immediate spin crossmatch and the electronic crossmatch.
32.14	Discuss and perform phenotyping on recipient and donor specimens.
32.15	Identify symptoms of the suspected transfusion reaction and the required laboratory work-up.
32.16	Discuss immune hemolytic disorders and perform the direct antiglobulin test.
32.17	Discuss specialized techniques.
32.18	Perform quality control (QC) on reagents.
32.19	Describe pathophysiology of hemolytic disease of the fetus and newborn.
33.0	Demonstrate knowledge of microbiological principles and procedures. – The student will be able to:
33.01	Discuss microbial taxonomy and nomenclature.
33.02	Discuss bacterial metabolism, reproduction, cell structures and their functions.
33.03	Discuss classification, composition and preparation of culture media.
33.04	Discuss the human pathogenesis of bacteria.
33.05	Discuss and perform sterilization techniques.
33.06	Perform culturing techniques for urine, stool, wound, respiratory, body fluids, and blood specimens.
33.07	Perform techniques of microbiology related to inoculation and transfer of cultures.

33.08	Discuss the principles of Gram and AFB stains.
33.09	Accurately perform, read and report gram stains.
33.10	Perform techniques necessary for isolation and identification of aerobic and anaerobic bacterial organisms.
33.11	Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
33.12	Perform and interpret antimicrobial susceptibility tests.
33.13	Discuss collection and handling of specimens for fungal, mycobacterial and viral culture.
33.14	Prepare and examine specimens, and identify ova and parasites when present.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**Clinical learning experiences in a clinical laboratory and related areas are an integral part of this program. Clinical learning experiences should reflect the full breadth of responsibilities expected of a Medical Laboratory Technician and should include appropriate experience in each of the areas of the laboratory described herein. The specified length for each of the courses listed is inclusive of clinical experience for each of the respective laboratory sections.**

### Special Notes

This program meets the Department of Health HIV/AIDS Domestic Violence and Prevention of Medical Errors education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Either a community college or school district may offer the ATD program. When offered at the community college, college credit shall be awarded for completion of this program. When offered at the school district, vocational credit will be awarded. Vocational credit will be converted to college credit upon transfer to the AS degree at the community college.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools. The programs should be accredited by:

The Accrediting Bureau of Health Education Schools (ABHES)  
7777 Leesburg Pike, Suite 314  
North Falls Church, VA 22403  
(703) 917-9503 Fax (703) 917-4109

Or any other agency as specified by the Division of Medical Quality Administration, Board of Clinical Laboratory Personnel Chapter 483 F.S., Rule 590 FAC, "Florida Clinical Laboratory Personnel Law". The graduate of a board approved program should be prepared to take the appropriate licensing examination to practice in Florida and an appropriate national certifying examination. For further information contact:

Board of Clinical Laboratory Personnel  
4052 Bald Cypress Way, Bin CO7  
Tallahassee, FL 32399-3257  
(850) 245-4444 x3625

National Certification is voluntary and may be obtained from the:

American Medical Technologists  
710 Higgins Rd.  
Park Ridge, IL. 60068  
(847) 823-5169 or  
800-275-1268

Or

National Healthcareer Association  
7500 West 160<sup>th</sup> Street  
Stilwell, Kansas 66085  
800-499-9092  
(973) 644-4797

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

### **Program Length**

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 40 credits. When offered at a technical center the standard length of this program is 1515 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Florida Department of Education  
Curriculum Framework

**Program Title:** Ophthalmic Laboratory Technician  
**Career Cluster:** Health Science

CCC	
CIP Number	0351100600
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	51-9083 Ophthalmic Laboratory Technicians

**Purpose**

This certificate program is part of the Opticianry AS degree program (1351180100).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as Ophthalmic Laboratory Technicians. SOC Code 51-9083 (Ophthalmic Laboratory Technicians).

The content includes but is not limited to basic instruction in anatomy and physiology, CPR, Heartsaver, office practices and dispensing of visual devices. Because optometrists now deal with certain drugs, students need knowledge of diagnostic and therapeutic drugs under supervision.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Surface ophthalmic lenses.
- 13.0 Edge and finish lenses.
- 14.0 Insert and mount lenses.
- 15.0 Select and order frames and lenses.
- 16.0 Fit and dispense prescriptions.
- 17.0 Fit contact lenses.
- 18.0 Repair frames.



Florida Department of Education  
Student Performance Standards

**Program Title:** Ophthalmic Laboratory Technician  
**CIP Number:** 0351100600  
**Program Length:** 24 credit hours  
**SOC Code(s):** 51-9083

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Ophthalmic Technician AS degree program (1351180301). At the completion of this program, the student will be able to:**

12.0 Surface ophthalmic lenses. – The student will be able to:

12.01 Demonstrate knowledge of layout single vision and multi-focal lenses.

12.02 Demonstrate knowledge of fabrication of single vision lenses and/or multi-focal lenses.

12.03 Demonstrate knowledge of selecting ophthalmic lenses and supplies.

12.04 Perform lens verification and inspection.

13.0 Edge and finish lenses. – The student will be able to:

13.01 Layout and block lenses.

13.02 Machine and hand edge lenses.

13.03 Perform lens verification and inspection.

13.04 Demonstrate knowledge of air temper glass lenses.

13.05 Select appropriate lenses.

14.0 Insert and mount lenses. – The student will be able to:

14.01	Insert lenses into zplastic frames.
14.02	Insert lenses into metal frames.
14.03	Mount lenses into rimless and semi-rimless mountings or other appropriate designs.
14.04	Perform final inspection of eye glasses.
14.05	Demonstrate knowledge of lens enhancements/treatments.
15.0	Select and order frames and lenses. – The student will be able to:
15.01	Analyze written prescriptions.
15.02	Duplicate prescriptions from existing lenses.
15.03	Evaluate patient's life-style needs.
15.04	Use selected instruments to assist in the calculation of fitting measurements, including position of wear (POW).
15.05	Discuss charges with patients.
15.06	Order lenses and frames, including enhancements/treatments.
16.0	Fit and dispense prescriptions. – The students will be able to:
16.01	Verify finished prescriptions to specifications.
16.02	Align frames.
16.03	Adjust and fit optical devices to patients.
17.0	Fit contact lenses. – The student will be able to:
17.01	Analyze prescriptions.
17.02	Evaluate patient suitability.
17.03	Use selected instruments to conduct and assess fittings.
17.04	Identify types of contact lenses.
17.05	Perform patient training.
18.0	Repair frames. – The student will be able to:

18.01 Replace/repair nose pieces on plastic or metal frames.

18.02 Replace/repair frame-front, temples, monofilament, and rimless.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students are prepared to assist in performing tests to determine defects in vision, preparing and fitting eyeglasses and contact lenses, and administering corrective eye exercises and other treatments under the supervision of a person licensed under FL Statutes 458, 459, 463 or 484.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Students should be strongly encouraged to take the Certification examination offered by the Paraoptometric Section of the American Optometric Association.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Central Sterile Processing Technologist  
**Career Cluster:** Health Science

CCC	
CIP Number	0351101202
Program Type	College Credit Certificate (CCC)
Program Length	30 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9093 Medical Equipment Preparers

**Purpose**

This certificate program is part of the Surgical Services AS degree program (1351090901).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as central sterile processing technicians SOC Code 31-9093.00 (Medical Equipment Preparers), central service technicians.

The content includes but is not limited to central services departmental organization and function; basic anatomy, physiology, microbiology and chemistry related to central service activities; quality assurance; infection control and isolation techniques, principles of safety; principles, methods and controls of sterilization processes; cleaning, processing, packaging, distributing, storing, and inventory control of sterile goods, instruments, trays, and equipment; medical terminology; surgical instrumentation; basic computer skills, interpersonal and job seeking skills, fundamentals of communication, case cart management, laparoscopic specialty, orthopedic specialty, flexible scope processing , shift supervisory skills and procurement of supplies and equipment.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Describe supply distribution systems and the principles of inventory control.
- 13.0 Demonstrate the ability to recall and dispose of or reprocess sterile supplies.
- 14.0 Identify fundamentals of the supply chain.
- 15.0 Demonstrate language arts knowledge and skills.
- 16.0 Solve problems using critical thinking skills, creativity and innovation.
- 17.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
- 18.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 19.0 Demonstrate the roles and responsibilities of the central supply worker.
- 20.0 Recognize basic principles of microbiology.
- 21.0 Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel.
- 22.0 Describe how central service is involved in controlling infections in hospitals.
- 23.0 Explain the purpose of Occupational Safety and Health Act.
- 24.0 Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items.
- 25.0 Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers.
- 26.0 Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty.

Florida Department of Education  
Student Performance Standards

**Program Title:** Central Sterile Processing Technologist  
**CIP Number:** 0351101202  
**Program Length:** 30 Credit Hours  
**SOC Code(s):** 31-9093

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**This certificate program is part of the Surgical Services AS degree program (135100002). At the completion of this program, the student will be able to:**

**Students completing intended outcomes (12-26), in addition to the health science core, will meet the requirements of Central Sterile Processing Technologist – CCC (SOC Code 31-9093).**

12.0 Describe supply distribution systems and the principles of inventory control. -- The student will be able to:
12.01 Define the benefits of inventory control.
12.02 Describe the methods of inventory control.
12.03 Compare the advantages and disadvantages of each distribution methods.
12.04 Process a requisition marked "stat" - locate article, price, etc.
12.05 Demonstrate the process of stock rotation.
12.06 Describe the processes for loaner instrumentation and equipment.
12.07 Describe the process of product evaluation.
12.08 Describe the procedures for tracking the usage of medical/surgical supplies, patient care equipment and specialty carts.
12.09 Describe the procedures for documenting supply and equipment charges.



12.10	Demonstrate the methods of case cart preparation and the utilization of preference cards.
13.0	Demonstrate the ability to recall and dispose of or reprocess sterile supplies. -- The student will be able to:
13.01	Explain the factors that affect how long a package can be considered safe for use.
13.02	Explain the differences between event related, date related, and manufacturer recommendations.
13.03	State the methods of determining expiration dates.
13.04	List the steps in reprocessing outdated hospital packaged items.
13.05	List conditions that would make a product unsafe for use
13.06	Describe the use of tamper evident seals.
13.07	Describe the methods of reprocessing.
13.08	Identify standards and facility policies on reprocessing of single use items.
13.09	Describe the process of recall for medical/surgical supplies.
14.0	Identify fundamentals of the supply chain. -- The student will be able to:
14.01	Describe the process of supply chain management.
14.02	Communicate with other hospitals, facilities, or company representatives for procurement of supplies and equipment.
14.03	Describe several different methods of procurement of supplies.
14.04	Describe basics of receiving items, including documentation of receiving and release to other facilities.
15.0	Demonstrate language arts knowledge and skills. – The students will be able to:
15.01	Locate, comprehend and evaluate key elements of oral and written information.
15.02	Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
15.03	Present information formally and informally for specific purposes and audiences.
16.0	Solve problems using critical thinking skills, creativity, and innovation. – The students will be able to:
16.01	Employ critical thinking skills independently and in teams to solve problems and make decisions.
16.02	Employ critical thinking and interpersonal skills to resolve conflicts.

16.03	Identify and document workplace performance goals and monitor progress toward those goals.
16.04	Conduct technical research to gather information necessary for decision-making.
17.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. – The students will be able to:
17.01	Describe the nature and types of healthcare organizations.
17.02	Explain the effect of key organizational systems on performance and quality.
17.03	List and describe quality control systems and/or practices common to the workplace.
17.04	Explain the impact of the global economy on healthcare organizations.
18.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
18.01	Employ leadership skills to accomplish organizational goals and objectives.
18.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
18.03	Conduct and participate in meetings to accomplish work tasks.
18.04	Employ mentoring skills to inspire and teach others.
18.05	Analyze attributes and attitudes of an effective leader.
18.06	Recognize factors and situations that may lead to conflict.
18.07	Demonstrate effective techniques for managing team conflict.
19.0	Demonstrate the roles and responsibilities of the central supply worker. -- The student will be able to:
19.01	Describes professional standards related to personal hygiene and dress codes for the central supply worker to include appropriate PPE.
19.02	Identifies relevant federal, state, and local guidelines, standards and regulations.
19.03	Describes the function and workflow of the sterile processing department.
19.04	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, and reaching.
19.05	Apply policies and procedures related to sterile processing functions (safety, infection control, disaster control, disaster, MSDS, incident reports, etc.).
19.06	Describes importance of following device, equipment, instrument or supply manufacturer's instructions for processing, operation, and troubleshooting.
20.0	Recognize basic principles of microbiology. -- The student will be able to:

20.01	Describe terms related to microbiology and the control of microorganisms in central sterile processing departments.
20.02	Identify the main categories of microorganisms.
20.03	Describe the life functions of microorganisms.
20.04	Describe conditions affecting the growth of bacteria.
20.05	Describe special methods used to destroy harmful microorganisms on fomites in the environment.
20.06	List the helpful microorganisms.
20.07	Describe how the body controls the growth of pathogenic microorganisms.
20.08	Identify pathogenic microorganisms commonly found in central service departments.
21.0	Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel. -- The student will be able to:
21.01	Identify word elements for medical terms.
21.02	Relate anatomical concepts to orthopedic devices and other supplies and equipment issued by the CS Department.
22.0	Describe how central service is involved in controlling infections in hospitals. -- The student will be able to:
22.01	Describe hospital acquired infections.
22.02	Describe the types of isolation.
22.03	Describe the organization and functions of CS.
22.04	Describe the CS responsibilities for infection control and traffic patterns when in the operating room and other departments.
22.05	Identify proper storage and transportation standards for supplies in the facility (receivables, sterile, clean, or contaminated).
22.06	Describe the organizational patterns of health care facilities.
23.0	Explain the purpose of Occupational Safety and Health act. -- The student will be able to:
23.01	Describe how employees are protected under OSHA.
23.02	Describe potential workplace hazards in CS. (wet floors, chemicals, fumes, gases, steam, electrical outlets, body fluids, microorganisms, sharps, and medical wastes).
23.03	Describe the role preventive maintenance plays in patient and personnel safety in the hospital.
23.04	Explain the purpose of Florida's "Right to Know" law and its provisions.

23.05	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.
23.06	Implement appropriate regulatory and accreditation agency patient safety guidelines.
24.0	Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items. -- The student will be able to:
24.01	Describe the importance of thorough cleaning to the overall objectives of making items safe for patient use.
24.02	Explain the importance of following manufacturers' instructions in cleaning each item for reprocessing.
24.03	Describe the levels of disinfection, the cleaning process and methods of disinfection for the environment, instruments, syringes, needles, rubber goods and equipment.
24.04	Describe the mechanisms of action for each disinfection method including ultrasonic machines and washer/sterilizers.
24.05	Describe the strategies for managing difficult to control microorganisms that require isolation techniques and specialized decontamination methods including Creutzfeldt - Jakob disease (CJD).
24.06	Describe the factors affecting decontamination (water temperature, loading procedures, water impurities, opening and disassembling).
24.07	Distinguish correct reprocessing policies related to single use, limited use, and reusable items.
24.08	Describe decontamination methods for drill systems and batteries.
24.09	Describe the function of case cart washers, and alternative methods of cleaning.
24.10	Describe the need for testing and monitoring all decontamination machines for proper function and cleaning agents.
24.11	Explain the importance of using correct chemicals for cleaning in regards to water quality, PH, filters, softeners, enzymes, lubricants.
24.12	Describe the types, characteristics, and uses of chemicals, solutions, and gases utilized for decontamination (detergents, disinfectants, enzymatics, and germicides).
24.13	Demonstrate the decontamination process for instruments, syringes, needles, rubber goods and equipment.
24.14	Demonstrate flexible endoscopic leak testing, decontamination, and reprocessing.
24.15	Demonstrates decontamination and proper handling of rigid scopes.
24.16	Describes the methods of high level disinfection including manual and automated endoscopic reprocessor (AER).
24.17	Describe the types of sterilizers and methods of sterilization.
24.18	Describe the primary objectives in selecting the correct packaging materials for both the individual item and the sterilization method to be used.
24.19	Describe the principles of packaging.

24.20	Describe the characteristics of packaging materials in relationship to sterilization methods.
24.21	Describe the principles of linen pack and tray construction/assembly.
24.22	Describe the recommended labeling methodologies.
24.23	Identify basic surgical procedure trays, instruments, supplies, and accessories.
24.24	Explain the principles utilized when loading different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.25	Recognize equipment malfunction and list corrective actions.
24.26	Demonstrate the wrapping of procedure trays, instruments and other supplies.
24.27	Demonstrate loading of different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.28	Describe how sterile supplies should be handled.
24.29	Demonstrate handling, transportation and storage of clean, sterile and nonsterile supplies and equipment.
25.0	Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers. -- The student will be able to:
25.01	Describe the types of sterilization, sterilization cycles, and parameters for each.
25.02	Describe the importance of the manufacturer's recommendations for the safe operation of each type of sterilizer.
25.03	Describe the methods of sterilization monitoring.
25.04	Demonstrate the process of preparing and documenting the sterilizer load contents for each sterilizer correctly according to the manufacturer's recommendations.
25.05	Demonstrate the operation, testing, and monitoring of sterilizers.
25.06	Demonstrate the ability to interpret and document monitoring devices, printouts, and charts accurately for each sterilization system utilized.
25.07	Identify the standards for, and facility policy regarding, frequency of monitoring for all sterilizers.
26.0	Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty. -- The student will be able to:
26.01	Describe instrument terminology and identify the anatomy of surgical instruments (jaws, shanks, box locks, rings, etc.).
26.02	Describe the types and functions of instruments.
26.03	Describe the types of instrument construction.
26.04	Demonstrate appropriate techniques for inspection and testing of instruments.

26.05	Identify instrumentation and equipment by name and usage.
26.06	Correctly label instrumentation and equipment.
26.07	Demonstrate the methods of instrument identification, marking, and tracking of use.
26.08	Demonstrate the assembly of various instrument sets and surgical specialty equipment.
26.09	Demonstrate the process regarding the manufacturer's recommendations for instrument and equipment care including handling, operation, maintenance, and troubleshooting.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

The standard length of this program is 900 clock hours or 30 credit hours. This includes the Health Careers Core (90 clock hours).

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Inquiries about a voluntary certification for sterile processing and distribution may be made to:

International Association of Hospital Central Service Materiel Management (IAHCSMM)  
213 West Institute Place, Suite 307, Chicago, IL 60610  
Toll Free: 800-962-8274

OR

Certification Board for Sterile Processing and Distribution, Inc. (CBSPD)  
2 Industrial Park Road-Suite 3  
Alpha, NJ 08865

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the National Health Care Foundation Skill Standards Assessment will be taken with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Health Navigator Specialist  
**Career Cluster:** Health Science

<b>CCC</b>	
CIP Number	0351220800
Program Type	College Credit
Standard Length	31 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11.9111 Medical and Health Services Manager 21.1094 Community Health Worker

**Purpose**

This certificate program is part of the Health Navigator AS degree program (1351220800).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to prepare students for employment as health navigators. SOC Codes: 11.9111 (Medical and Health Services Manager) or 21.1094 (Community Health Worker) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of health insurance, introduction to computer literacy, health care organization, medical ethics, legal aspects, and advanced technical skills in a chosen health-related profession, health and safety.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Program Structure**

This program is a planned sequence of instruction consisting of 31 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Identify and apply basic knowledge of different aspects of wellness.
- 02.0 Demonstrate knowledge of various topics pertinent to the five core disciplines of public health.
- 03.0 Demonstrate the ability to identify U.S. health care delivery funding sources.
- 04.0 Demonstrate ability to work as a health navigator or community health worker.
- 05.0 Demonstrate knowledge of current events in the field of public health.
- 06.0 Demonstrate knowledge of health communication and its impact on health outcomes.
- 07.0 Define and describe: long-term care and types of residences.
- 08.0 Demonstrate the use of evidence to draw conclusions about disease etiology.
- 09.0 Demonstrate knowledge of the three primary levels of prevention.
- 10.0 Demonstrate knowledge of how the insured and uninsured interact with the United States healthcare system.

**Florida Department of Education  
Student Performance Standards**

**Program Title:** Health Navigator Specialist  
**CIP Number:** 0351220800  
**Program Length:** 31 credit hours  
**SOC Code(s):** 11.9111, 21.1094

**This certificate program is part of the Health Navigator (60) AS program (1351221100). At the completion of this program, the student will be able to:**

01.0 Identify and apply basic knowledge of different aspects of wellness. – The student will be able to:

01.01 Discuss integrating health living into one's lifestyle.

01.02 Define: physical fitness, mental health, nutrition, tobacco usage, alcohol consumption, illicit drug use, family living and how these factors connect with the concepts of wellness on a personal level.

01.03 Identify the risk factors for cardiovascular disease.

01.04 Describe the effects of tobacco and smoking on the human body.

01.05 Describe the various fitness methods to improve health.

01.06 Discuss the effects of nutrition on health and wellness.

01.07 Explain body composition and achieving a healthy weight.

01.08 Describe stress management strategies.

01.09 Discuss the use and abuse of illicit drugs in society.

01.10 Describe the effects of chronic disease on the human body.

02.0 Demonstrate knowledge of various topics pertinent to the five core disciplines of public health. – The student will be able to:

02.01 Define public health.

02.02 Describe core disciplines of public health: Community and Family Health, Environmental and Occupational Health, Health Policy and Management, Epidemiology/Biostatistics and Global Health.

02.03 Describe why public health is important.

02.04 Summarize the historical milestones in public health.

02.05	Identify and describe the five core disciplines of public health.
02.06	Identify elements of public health in our everyday world.
02.07	Explain the concepts of: prevention, detection, control of infectious and chronic conditions, health disparities, and global health.
02.08	Compare and contrast examples of major domestic and international public health issues.
03.0	Demonstrate the ability to identify U.S. health care delivery funding sources. – The student will be able to:
03.01	Demonstrate an understanding of the evolutionary perspective of health services and its relevance with the existing healthcare system, facilities and services.
03.02	Explain the social, political, and public policy implications of health-related issues, such as availability, cost, delivery, and financing.
03.03	Describe the various health care organizations and service delivery options.
03.04	Identify the major health professions and explain the role of each and their licensing/educational requirements.
03.05	Compare and contrast the health care delivery systems of the U.S. with other major industrialized nations.
03.06	Understand the array of career choices in the health care sector of the economy.
03.07	Discuss the various sources and uses of funds for healthcare as well as market trends and future implications.
04.0	Demonstrate ability to work as a health navigator or community health worker. – The student will be able to:
04.01	Identify community agencies where health navigators are employed.
04.02	Complete a field experience that provides student with descriptions of primary duties, annual salary and interaction with professional organization.
04.03	Demonstrate an understanding of the essential duties of health navigators.
04.04	Describe barriers to care faced by patients and consumers of placement site.
04.05	Discuss the core health activities of placement site.
04.06	Demonstrate an understanding of how placement site works with: local, county, state and federal agencies.
04.07	Evaluate the role of health navigation in patient health care.
04.08	Demonstrate communication techniques to assess patient health and needs.
05.0	Demonstrate knowledge of current events in the field of public health. – The student will be able to:
05.01	Identify outlets (news, media, governmental) used to communicate public health events to the general public.
05.02	Describe the implications of current events on public health.

05.03	Discuss concerns related to how public health information is relayed to the public.
05.04	Recognize how reporting of global events (e.g. epidemics, regime change, and weather events) has the potential to impact other areas.
05.05	Locate emerging public health trends.
05.06	Explain etiology of emerging public health trends discussed throughout semester.
05.07	Discuss legislation designed to protect the public's right to information during major health events (epidemics, terrorism, natural disasters).
06.0	Demonstrate knowledge of health communication and its impact on health outcomes. – The student will be able to:
06.01	Describe key concepts and skills used to identify individuals with reduced health literacy.
06.02	Explain how understanding health literacy is as a determinant of health.
06.03	Discuss how to best provide culturally-appropriate communication and care starting with an awareness of one's own culture and the skills needed to provide sensitive and meaningful care and services to others.
06.04	Discuss basic constructs of theories used in behavior change and persuasion.
06.05	Classify health communication programs based on disease type (e.g. chronic vs. infectious).
06.06	Determine communication methods to be used in specific settings (healthcare, school, and workplace).
06.07	Discuss risks and rewards associated with use of digital communication in health care.
07.0	Define and describe: long-term care and types of residences. – The student will be able to:
07.01	Explain psychological factors associated with the graying of populations in developed areas.
07.02	Describe demographic characteristics of aging population.
07.03	Describe the phenomenon of increasing life expectancy.
07.04	Discuss health promotion and prevention for aging populations.
07.05	Compare and contrast aging populations across the 20 and 21 <sup>st</sup> centuries.
07.06	Summarize the geriatric medicine movement.
08.0	Demonstrate the use of evidence to draw conclusions about disease etiology. - The student will be able to:
08.01	Define evidenced based thinking in public health.
08.02	Identify evidence based recommendations to determine disease etiology, benefits and basic recommendations for prevention.

08.03	Discuss health information concepts related to economic, legal, and social issues.
08.04	Investigate a problem by using evidenced based thinking skills to define a health problem and determine what information is needed to make a decision.
08.05	Locate and evaluate online health information to determine appropriate audiences are reached using specific content to the demographic group.
09.0	Demonstrate knowledge of the three primary levels of prevention. – The student will be able to:
09.01	Discuss implementation methods of prevention used in public health: education, motivation, and obligation.
09.02	Describe the three levels of prevention in public health: primary, secondary, and tertiary.
09.03	Explain how preventative methods can be used throughout the life-cycle.
09.04	Identify individual and community prevention needs in order to connect available resources to distressed areas.
09.05	Summarize specific primary prevention methods including: vaccinations, exercise, nutrition counseling, and birth control.
09.06	Summarize secondary prevention methods including: screening for risk factors of cardiovascular disease and injury prevention.
09.07	Summarize specific tertiary prevention methods including: treatment to control symptoms and prevent complications.
10.0	Demonstrate knowledge of how the insured and uninsured interact with the United States healthcare system. – The student will be able to:
10.01	Identify types of health insurance, e.g., Medicaid, Medicare and Medigap, exchanges, employment-based.
10.02	Accurately describe the history of the development of the U.S. Healthcare system.
10.03	Explain the relationship between essential services such as: preventive care, emergency care, choice of providers, institutional options, prescription drug options and coverage decisions.
10.04	Describe issues associated with having access to care in the absence of health insurance and consequences of the decision not to obtain health insurance.
10.05	Explain goals, limitations and basic rules for eligibility for worker's compensation.
10.06	Discuss market and social justice philosophies in relation to health care coverage internationally.
10.07	Describe the advantages and disadvantages of the U.S. health care coverage system.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Biotechnology Specialist  
**Career Cluster:** Health Science

<b>CCC</b>	
CIP Number	0641010100
Program Type	College Credit Certificate (CCC)
Program Length	19 credit hours
CTSO	HOSA: Future Health Professionals; Skills USA
SOC Codes (all applicable)	19-4021 – Biological Technicians

**Purpose**

This certificate program is part of the Biotechnology Laboratory Technology AS degree program (1341010100).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The content includes but is not limited to broad biology and chemistry concepts, algebraic analysis, documentation procedures, basic laboratory techniques and concepts, as well as biohazard and safety procedures.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate communication skills.
- 02.0 Demonstrate safety skills.
- 03.0 Demonstrate basic laboratory skills.
- 04.0 Demonstrate regulatory compliance.
- 05.0 Demonstrate appropriate decision making and problem solving techniques.
- 06.0 Demonstrate specific laboratory skills.
- 07.0 Demonstrate quality assurance/control.
- 08.0 Maintain facility and equipment.

Florida Department of Education  
Student Performance Standards

Program Title: Biotechnology Specialist  
 CIP Number: 0641010100  
 Program Length: 19 credit hours  
 SOC Code(s): 19-4021

**This certificate program is part of the Biotechnology Laboratory Technology AS degree program (1341010100). At the completion of this program, the student will be able to:**

01.0	Demonstrate communication skills. -- The student will be able to:
01.01	Comprehend and use correct scientific, technical and medical vocabulary.
01.02	Follow/analyze experimental and laboratory protocols.
01.03	Keep accurate laboratory records in notebooks or other approved mediums.
01.04	Perform basic applications in word processing, spread sheets, databases, presentations and project management.
01.05	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
02.0	Demonstrate safety skills. -- The student will be able to:
02.01	Identify and maintain first aid supplies, eye wash station, emergency shower, co-worker contact, medical information, emergency protection, chemical hygiene plan, and evacuation plan.
02.02	Follow correct safety procedures, guidelines and chemical hygiene plans.
02.03	Maintain required environmental health, safety, and laboratory training.
02.04	Handle, store, and dispose of hazardous materials per appropriate MSDS, other safety guidelines, Worker Protection Standards (WPS) and/or appropriate regulatory guidelines (i.e. state, federal, local, accreditation, etc.).
02.05	Follow standard precautions for biological pathogen, both proper handling and disposal, and define principles of contamination control including standard and transmission based precautions.
02.06	Demonstrate procedures for declaring a laboratory emergency and/or responding with appropriate institutional procedures.
03.0	Demonstrate basic laboratory skills. -- The student will be able to:
03.01	Obtain and read protocol, test procedure, standard operating procedure (SOP), equipment manuals, and proper forms.
03.02	Clean, organize and sterilize materials and laboratory instruments, when required.

03.03	Organization of supply inventory; date/label reagents and store promptly upon arrival.
03.04	Demonstrate knowledge of asepsis and practice procedures such as hand-washing and isolation.
03.05	Use titration/pipetting techniques; measure volume/weights.
03.06	Perform basic calculations, unit conversions, graphing of data and statistical analysis.
03.07	Calculate and prepare dilutions series.
03.08	Prepare solutions and reagents for laboratory use.
03.09	Collect and set up samples for analysis.
03.10	Perform up general laboratory tests, including, setup equipment and perform/document tests and results.
03.11	Demonstrate knowledge of chemical cross-contamination control between reagents from weighing implements, storage containers and media.
04.0	Demonstrate regulatory compliance. -- The student will be able to:
04.01	Follow guidelines from the appropriate regulatory, accreditation, and/or certification agencies, such as FDA, OSHA, USDA, NIH, NR, DOT, EPA, CDC, ISO/IEC, and NRC.
04.02	Comply with principles using current Good Experimental Practices and quality improvement systems (e.g., GXP; GLP, GMP, GCP).
05.0	Demonstrate appropriate decision making and problem solving techniques. -- The student will be able to:
05.01	Make decisions based on accurate facts, data, and agreed-upon goals.
05.02	Demonstrate ability to evaluate data and draw conclusions.
05.03	Diagnose problem, its urgency and causes, and documenting as appropriate.
06.0	Demonstrate specific laboratory skills. -- The student will be able to:
06.01	Perform microbiology skills, which may include but are not limited to, plating techniques, isolating and characterizing cell lines, propagating cell lines, and cryogenic techniques.
06.02	Perform various genetic engineering techniques including but not limited to, transformation, transfection of mammalian, insect, and/or bacterial cells.
06.03	Perform various molecular biology techniques, including but not limited to isolation, quantitation, amplification, electrophoresis and hybridization of both RNA and DNA and construction of recombinant vectors.
06.04	Demonstrate an understanding of translation assays, DNA libraries and isotopic and non-isotopic labeling techniques.
06.05	Perform chemical assays including but not limited to measuring turbidity, viscosity, density, quantitative analysis, distillation techniques, titration techniques, employing dyes and indicators, lyophilization, and organic chemistry techniques.
07.0	Demonstrate quality assurance/control. -- The student will be able to:

07.01	Perform quality tests and document results.
07.02	Verify test standards and maintain QA records.
07.03	Archive samples and documents.
07.04	Inspect and verify integrity of product, procedure, and specimen.
08.0	Maintain facility and equipment. -- The student will be able to:
08.01	Monitor/record the environmental condition of the facility (e.g., growth chamber, laboratory, greenhouse, storage room, animal room, freezers or manufacturing site).
08.02	Notify appropriate personnel if sampling indicates a problem.
08.03	Clean work area according to SOPs.
08.04	Label equipment.
08.05	Check calibration and perform systems diagnostics
08.06	Check and maintain equipment, logs and perform preventative maintenance tasks according to schedule and, operate laboratory equipment, and instrumentation after familiarization with manuals and/or training.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals and Skills USA are the intercurricular career and technical student organizations for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

Program Title: Funeral Services  
Career Cluster: Health Science

AS	
CIP Number	1312030100
Program Type	College Credit
Standard Length	72 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11-9061 Funeral Service Managers

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as embalmers, funeral attendants, or funeral directors and morticians (SOC Code 119061 Funeral Directors and Morticians) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to techniques of embalming and restorative art, mortuary administration, funeral law, public health and sanitation, human anatomy and physiology, microbiology, pathology, mortuary social science, stress management, employability skills, leadership and human relations skills, and health and safety, including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 72 credit hours.

## **Regulated Programs**

### **This program is regulated by the Florida Board of Funeral, Cemetery, and Consumer Services.**

The program must be accredited by the American Board of Funeral Service Educators and once completed a student may apply to the Division of Funeral, Cemetery and Consumer Services for their internship and to take the Florida Laws and Rules Exam to practice as a licensed embalmer or funeral director, according to Chapter 497 FS.

The intended outcomes are the same as the adopted curricular objectives of the American Board of Funeral Service Education which must be endorsed by accredited programs as curricular standards.

Upon completion of the associate in science in funeral service, graduates are qualified to write the National Funeral Service Board Examination. The program must be accredited by the American Board of Funeral Services Education, Inc., 14 Crestwood Road, Cumberland, Maine 04021 (207/829-5715) 497.000 F.S.; 69K-15.002(1) F.A.C.

One year of internship is required in the State of Florida for the embalmer or the funeral director license. These internships may be served concurrently. Upon completion of the internship, students are eligible to write the Florida state examination for the embalmer and funeral director license.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Satisfactorily perform the basic techniques of embalming and restorative art and cosmetology.
- 02.0 Give evidence of an understanding of the sociological, psychological, spiritual, physical, and legal needs of the family and community, and how to meet those needs in the treatment, handling, and disposition of the dead human body.
- 03.0 Explain the concepts of death, disinfection, preservation and restoration of a dead human body.
- 04.0 Identify fundamental principles of personal and public health protection measures, and define the embalmer's obligation to this function.
- 05.0 Identify, define, and employ the necessary technical terminology to facilitate communication and cooperation with members of allied professions and the public.
- 06.0 Give evidence of personal manifestations of continued professional growth through education and research.
- 07.0 Identify those common conditions surrounding death which may prove of potential concern to the forensic pathologist.
- 08.0 Take care of the dead in a manner which recognizes the inherent dignity of human-kind.
- 09.0 Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure.
- 10.0 Interpret and communicate the purposes, procedures, and values of funeral services.
- 11.0 Counsel people regarding funeralization.
- 12.0 Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served.
- 13.0 Identify and comply with the laws pertaining to funeral service practice and public health.
- 14.0 Manage personnel, facilities, and other resources.
- 15.0 Apply business principles and practices to funeral service.
- 16.0 Recognize the importance of inter-professional and intra-professional relationship and responsibilities.
- 17.0 Recognize the procedures for becoming an active member of the community and participating in community affairs.
- 18.0 Demonstrate and understanding of entrepreneurship.



Florida Department of Education  
Student Performance Standards

Program Title: Funeral Services  
 CIP Number: 1312030100  
 Program Length: 72 credit hours  
 SOC Code(s): 11-9061

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Satisfactorily perform the basic techniques of embalming and restorative art and cosmetology. - The student will be able to:
01.01	Demonstrate knowledge of the body systems, with special emphasis on the circulatory system, to the degree needed to give a working basis for studies in such related subjects as embalming, pathology, public health, and restorative art.
01.02	Specify representative chemicals in embalming fluids (arterial, cavity, and accessory) and give their respective functions.
01.03	Describe the basic theories and laws of chemistry and relate their importance to both the living and deceased.
01.04	Identify and demonstrate the use of standard embalming instruments, machines and accessories.
01.05	Describe prior to, and during the procedure of embalming, the problems presented by disease processes and etiological factors.
01.06	Identify potentially harmful chemicals used in the preparation room, and the precautions to be taken with each.
01.07	Relate specified types of restoration to the correct embalming procedures.
01.08	Select, from a specified cosmetic medium, the correct colorants (compounds) to achieve a natural appearance under various conditions.
01.09	Exhibit a skill in modeling which reflects an ability to restore features of the face.
01.10	Interpret a photograph by evaluating the highlights and shadows, equal and unequal facial proportions, the specific form of the head, and the chief characteristics of each feature.
01.11	Identify and describe the norms of the head and face (direct and profile views), and each of the four facial features - identify four variations of these norms.
01.12	Classify and explain the principles of pigmentary (color) mixtures, and relate their application to cosmetic compounds and the influence of adjacent colors on one another in the funeral setting.
01.13	Name and locate three external body structures of the skull and explain how each influences surface form.
01.14	Identify and describe the use of various cosmetic and restorative materials and equipment.
02.0	Give evidence of an understanding of the sociological, psychological, spiritual, physical, and legal needs of the family and community, and

	how to meet those needs in the treatment, handling, and disposition of the dead human body. – The student will be able to:
02.01	Describe the varieties of funeralization seen in major religious and ethnic sub-cultures and in fraternal and military groups in America.
02.02	Relate contemporary sociological, theological, and philosophical thought to the matter of death, dying, bereavement and mourning in America.
02.03	Discuss and illustrate the interplay in society of custom and contemporary funeralization practices.
02.04	Distinguish among taboos, mores, folkways, customs, habits, laws, rites, rituals, and ceremonies as sociological terms applied to American funerals.
02.05	State significant changes in funeralization and embalming methods during the last half century.
02.06	Describe the philosophies of death in different cultures.
03.0	Explain the concepts of death, disinfection, preservation and restoration of a dead human body. – The student will be able to:
03.01	Explain the common types of death.
03.02	Identify the physical states of matter and differentiate between physical and chemical changes.
03.03	Identify essential characteristics of autolysis, hydrolysis fermentation, and putrefaction in the area of the chemistry of decomposition.
03.04	Identify the essential characteristics of carbohydrates, lipids, and proteins in the area of basic biochemistry.
03.05	Define organic chemistry and describe the characteristic features of aliphatic and cyclic compounds, hydrocarbons, alcohols, aldehydes, ketones, acids, esters, ethers, and amines.
03.06	Identify and describe the prerequisites for specified restorative and cosmetic treatments.
04.0	Identify fundamental principles of personal and public health protection measures, and define the embalmer's obligation to this function. – The student will be able to:
04.01	Explain the embalming-disinfection process as a public health procedure.
04.02	Describe infectious processes and explain the methods of transmission and control of common infectious diseases, with special emphasis upon their applications to the environment of the embalmer, the funeral director, and the public.
04.03	Identify and explain special treatments for cases involving common infections, traumatic and pathological conditions.
04.04	Recognize the pathological conditions which require special procedures in the removal, handling, preparation and disposition of human remains.
04.05	Apply infection control techniques according to Center for Disease Control (CDC) guidelines.
04.06	Document the relationship between understanding normal structure and functions of the human body and development of Healthy living habits.
04.07	Describe and demonstrate personal and environmental disinfection and decontamination procedures; explain proper use of major chemical disinfectants.

05.0	Identify, define, and employ the necessary technical terminology to facilitate communication and cooperation with members of allied professions and the public. – The student will be able to:
05.01	Demonstrate the acquisition and understanding of anatomical terminology at a level that will enable him to communicate effectively with members of allied professions and the lay public.
05.02	Identify common laboratory procedures and the common units of scientific measurement.
05.03	Identify the characteristic features of solutions, suspensions, and emulsions, and the processes of diffusion including osmosis, dialysis, and hydrolysis.
05.04	Identify a list of elements and their valences, radicals, ions, compounds and reactions related to problems faced by the embalmer and funeral director, and give their symbols, formulas, and equations.
05.05	Differentiate between the beneficial micro-organisms and the actual pathogens and opportunists commonly associated with both the living human host and dead human remains.
05.06	Demonstrate an understanding of host parasite relations and interactions, and the requirements for successful parasitism.
05.07	Identify host defense mechanisms and demonstrate general knowledge of innate, natural, and active immunologic responses.
05.08	Identify basic bacterial and fungal morphology and physiology.
05.09	Advise lay persons about the benefits of organ, tissue, bone, and whole body donation upon request.
06.0	Give evidence of personal manifestations of continued professional growth through education and research. – The student will be able to:
06.01	Identify the reasons one should cooperate in community programs for controlling disease and promoting medical research.
06.02	Give evidence of the appreciation of, and interest in, the human body as a subject for independent study and continuing intellectual growth.
07.0	Identify those common conditions surrounding death which may prove of potential concern to the forensic pathologist. – The student will be able to:
07.01	Identify and explain those special conditions attending a death whereby notification of the death is required to be given to the proper official (such as Coroner, Medical Examiner, Public Health Officer, Veterans Administration, etc.).
07.02	Identify the technical manifestations of death which may be of medico-legal significance.
08.0	Take care of the dead in a manner which recognizes the inherent dignity of human-kind. – The student will be able to:
08.01	Give evidence of respect for human remains.
08.02	Demonstrate acceptance of racial and cultural diversity.
09.0	Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure. – The student will be able to:
09.01	Identify the privileges and their limitations accorded the licensee with regard to caring for the dead, and serving the living.

09.02	Identify the responsibilities of the funeral director to those who have called him with regard to:
09.02.01	Providing services and merchandise as selected.
09.02.02	Explaining the financial aspects of the funeral, and pricing method used.
09.02.03	Explaining death benefits and/or burial allowances.
09.02.04	Notifying the clergy of the death, if appropriate.
09.02.05	Coordinating with the clergy on religious aspects of the funeral.
09.02.06	Explaining merchandise and related representations regarding final disposition.
09.02.07	Preparing a Statement of Goods and Services Selected pertaining to services, selected merchandise, supplemental items, and cash advances.
09.02.08	Explaining applicable laws, rules and regulations.
09.02.09	Referring families for professional counseling as appropriate.
09.03	Identify the responsibilities of the funeral director to the profession with regard to:
09.03.01	Costs procedures, and communication when transferring human remains to another funeral establishment.
09.03.02	Public education regarding funeralization.
09.04	Identify the responsibilities of the funeral director to the clergy in the matter of the policies, rules and regulations of religious institutions.
09.05	Perform the following tasks applicable to the state in which he/she intends to gain a license:
09.05.01	State the limitations placed upon the practice of the funeral director/embalmer.
09.05.02	Summarize the law, rules and regulations pertaining to:
09.05.02.01	The transportation of the dead.
09.05.02.02	Requirements and specifications of the funeral home, including the preparation room.
09.05.02.03	Define terms specified in the license laws, rules and regulations.
09.05.02.04	Identify the qualifications required of applicants for funeral director/mortician license.
09.05.02.05	Identify the grounds for issuance, revocation, suspension or refusal to renew or issue licenses.
09.05.02.06	Identify requirements for the conducting of funerals.
09.05.02.07	Identify the procedures for filing a complaint concerning a violation of the licensing law.
09.05.02.08	Identify provisions regarding reciprocity endorsement and emergency licensing.
10.0	Interpret and communicate the purposes, procedures, and values of funeral services. – The student will be able to:
10.01	Identify the purposes which the funeral serves for the family, friends, church, occupational associates, and community of the deceased.
10.02	Identify the values of the funeral.
10.03	Define common terms used in funeral services.
10.04	Identify the psychological purposes and values of the funeral.
10.05	Identify the sociological purposes and values of the funeral.
10.06	Organize and be prepared to discuss the purposes and values of the funeral.

10.07	Identify the philosophical purposes and values of funeral service.
11.0	Counsel people regarding funeralization. – The student will be able to:
11.01	Identify the major financial considerations that confront a bereaved family.
11.02	Identify the times or situations during which a funeral director will make use of counseling.
11.03	State the areas of counseling normally covered during funeralizations.
11.04	Describe the process of funeralization.
11.05	Describe contemporary opinions regarding psychology of death, grief, and bereavement.
11.06	Describe how the manner and cause of death affects the psychological needs of the bereaved.
11.07	List the information of importance to obtain during each type of counseling situation.
11.08	Identify and appraise the basic personal and personality problems that may appear during counseling situations.
11.09	Classify and analyze the various forms of funeral rites.
11.10	Describe contemporary opinions regarding sociology of death, grief, and bereavement.
11.11	Describe three or more types of counseling techniques applicable to funeral services and give reasons for the use of each in individual circumstances.
11.12	Describe recent developments pertaining to the theologies of death, grief and bereavement.
11.13	Describe the effects of the Uniform Anatomical Gift Act on funeralization.
11.14	Identify and describe stages of dying.
12.0	Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served. – The student will be able to:
12.01	Develop a warm, friendly and tactful attitude towards the family at the first meeting.
12.02	Identify the items of information which are necessary to complete the following forms:
12.02.01	Obituary
12.02.02	Death certificate via the Electronic Death Registration System (EDRS)
12.02.03	Social Security forms (SSA, 719, SSA 721)
12.02.04	Veteran's forms (Marker, Flag, Burial Allowance)
12.02.05	Burial/Transportation permits
12.02.06	Release/Authorization forms

12.03	Identify the person(s) who are qualified to give permission for release of the deceased from a hospital, or to sign the hospital death record, if required.
12.04	Identify the information to be secured from, and given to, the family upon initial family contact.
12.05	Describe the multiple steps required between initial notification of death and removal of the deceased.
12.06	Identify person(s) who qualify to authorize autopsy and embalming, and to approve the purpose and disclosure statement.
12.07	Identify the items and considerations usually included in the arrangement conference.
12.08	Identify the types of death certificates and their uses.
12.09	Identify the appropriate times usually considered necessary to meet the funeral needs of those being served.
12.10	Identify the consideration normally involved in setting the order for the processional and recessional of a funeral service including casket, casket bearer, children, clergy, friends, fraternal orders, funeral directors, honorary bearers, next of kin, relatives, and service organization.
12.11	Describe the multiple steps required between initial notification of death and removal of the deceased when the bereaved are not present at the time of death, regardless of the place or manner of death - including, but not limited to, the funeral director's determination of the need for a personal conference and/or counseling of the bereaved prior to the funeral arrangement conference.
12.12	Identify the items of clothing ordinarily required for the deceased.
12.13	Describe the proper techniques and equipment employed in the dignified removal of remains under diverse conditions.
12.14	Identify the reasons which require a discussion involving the family, the officiating clergyman, and the funeral director regarding visitation hours, time of funeral, and other aspects of the service.
12.15	Identify the purpose of the Burial-Transit Permit.
12.16	Write obituary and death notices.
12.17	Identify the purpose and content of pre-selection counseling.
12.18	Identify the participants functioning in funeral service and explain their duties.
12.19	Describe considerations involved in the dignified movement of casketed remains.
12.20	State considerations for determining the order of the funeral procession.
12.21	Coordinate a variety of committal rites when these are a part of a funeral.
12.22	Identify the psychological and sociological value of the funeral arrangement conference.
12.23	Identify methods of dealing with inter-personal conflicts among family members.
12.24	Discuss dismissal procedures for leaving the grave site.

12.25	Explain the problems involved in harmonizing the colors of caskets in the funeral setting.
12.26	Describe the various types of floral arrangements and the considerations involved in their placement.
12.27	Identify requirement/procedure pertaining to cremation, calcination and burial at sea.
13.0	Identify and comply with the laws pertaining to funeral service practice and public health. – The student will be able to:
13.01	Identify legally:
13.01.01	The nature of the right of the funeral director to take custody of a dead body, and the length of time such custody may be exercised.
13.01.02	The procedures for recovering the body.
13.01.03	The theory governing the right to recover for mutilation of a body, and the reasons for recovery of damages when mutilation results from negligence.
13.01.04	The basis of a funeral director's liability for the negligence of a volunteer driver in a funeral procession.
13.01.05	The legal duty of a funeral director regarding permits required by law.
13.01.06	The reasons for legal limitation on a funeral bill charged against an estate where creditor's claims exceed the assets of the estate.
13.01.07	How a testator may provide in their will for the payment of funeral expenses.
13.01.08	The duty of the funeral director for compliance with the Federal Trade Commission Funeral Rules.
13.01.09	The duty of the funeral director for compliance with the Magnuson-Moss Warranty Act (1975).
13.01.10	The duty of the funeral director for compliance with the provisions of Federal Wage and Hour Laws.
13.02	Describe status of a funeral bill as a charge against the estate.
13.03	Identify:
13.03.01	The conditions under which a funeral director must have permission before permitting an autopsy in their establishment, and state whether that permission may be qualified, restricted or revoked.
13.03.02	The liability of an embalmer for shaving a beard, cutting hair or otherwise altering the appearance of a body.
13.03.03	The legal duty of the funeral director regarding the personal effects of a decedent.
13.03.04	The extent of control a funeral director has over a funeral, and their legal duties to those attending a funeral or viewing a body at their funeral home.
13.03.05	The general rule in the determination of the validity of funeral expenses.
13.03.06	Which items are allowable in a funeral bill and which items are not allowable.
13.03.07	The legal basis for the modifications of the common law rule imposing liability upon the husband for the wife's funeral expenses.
13.03.08	Under what legal basis a widow may be required to pay the funeral expense of her deceased indigent husband.
13.03.09	The liability of the funeral director for the custody of the remains.

13.04	Identify:	
13.04.01		The liability of a volunteer who individually contracts to pay a funeral bill.
13.04.02		The liability of an executor, nominated personal representative, or administrator for funeral expenses.
13.04.03		Why a funeral director should be familiar with the law of disinterment.
13.04.04		The circumstances under which exhumation is permitted in criminal cases, and in civil cases.
13.04.05		The usual procedure for obtaining a disinterment authorization, and the legal principles under which disinterment statutes are upheld.
13.04.06		Who has the primary right to disinter a body, and the nature of the crime of disinterment without proper authorization.
13.04.07		The grounds upon which a funeral home can be prohibited from further operation in a residential district.
13.04.08		The conditions under which a funeral home or cemetery may be considered a nuisance per se.
13.04.09		Why the power of eminent domain may be invoked to acquire land for a public cemetery.
13.04.10		The power under which cemeteries may be regulated by the state, and what specific action must be taken to convert land to cemetery use.
13.04.11		The authority under which a private cemetery may enforce rules which control burial in it.
13.04.12		Why the owner of a cemetery lot may not use it for purposes other than burial, and whether or not he has the right to decorate and mark the grave.
13.04.13		Under what authority cemeteries are required to provide admittance to graves.
13.04.14		What kind of offense is desecration of a grave?
13.04.15		The proper position the funeral director should take when survivors of a decedent disputes the exercises of the right of disposition.

13.05	Identify:	
13.05.01		The essentials of a valid contract.
13.05.02		The reasons for maintaining death certificates.
13.05.03		How the remains may be transported by common carrier.
13.05.04		The legal consideration where persons die without medical attention.
13.05.05		The general order of nearest of kin including all relatives.
13.05.06		The legal implications of reasonable funeral expenses.
13.05.07		Two reasons for filing an embalming report for each body prepared by the funeral home.
13.05.08		The function of a court of equity.
13.05.09		Two classes of bodies legally available for dissection.
13.05.10		The legal doctrine regarding the photographing of a dead body.
13.05.11		The privileges and limitations of one holding the power of attorney.
13.05.12		The liability of the funeral director for the custody of the remains.

13.06	Describe the legal basis for funeral service licensure stating the legal obligation of funeral and its purpose.
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13.07	Identify:	
13.07.01		The doctrine of Stare Decisis.
13.07.02		Whether a dead body may be the subject of an action of replevin (holding a body for ransom).
13.07.03		The authority of a ship's Captain over dead bodies and any other applicable maritime laws or traditions.
13.07.04		The restrictions on burials of those dying of a communicable disease.
13.07.05		The conditions under which a dead body must be embalmed.
13.07.06		The effect of the decedent's wishes with respect to exercising the right and duty of disposition.
13.07.07		The proper position the funeral director should take when survivors of a decedent disputes the exercise of the right of disposition.
13.08	Define cremation and be able to identify all authorizations required to maintain legality of the procedure including informed consent.	
13.09	Describe the rights of a party in controlling a funeral, and the rights of a party to attend a funeral.	
13.10	Define "funeral contract", and state the legality of funeral contracts made by a decedent prior to death.	
13.11	Describe the rights of the decedent in pre-arranging their own funeral.	
13.12	Describe the legal limitation imposed in pre-arrangement agreements.	
13.13	Describe the legal status of a dead body.	
13.14	Identify the legal theory governing the right to recover from mutilation of a body, and the reasons for recovery of damages when mutilation results from negligence.	
13.15	Identify the circumstances under which the state or one of its subdivisions is liable for funeral expenses.	
13.16	Define and give the purpose of a Coroner's/Medical investigator's inquest and inquiry.	
13.17	Identify the rules and regulations governing burial in a National Cemetery.	
13.18	Distinguish between the property and no-property theories of dead human bodies.	
13.19	Identify two sources from which the rights and duties of a funeral director are derived.	
13.20	Identify those steps a funeral director should take before building or purchasing a funeral home.	
13.21	Distinguish between cooperation, a partnership, and a proprietorship, and state the advantages and disadvantages of each.	
13.22	Identify forms of legally binding sales contracts.	
13.23	Identify the conditions under which a note would be considered void.	
14.0	Manage personnel, facilities, and other resources. – The student will be able to:	
14.01	Answer the telephone properly.	

14.02	Receive initial contact information accurately and appropriately.
14.03	Identify importance of:
14.03.01	The appearance and cleanliness of the funeral home, preparation room, funeral coach, limousine, and parking lot.
14.03.02	The need for confidentiality of funeral home records, family records and financial data.
14.03.03	Maintaining staff communications.
14.04	Identify the procedure for filing the death certificate at the proper agency and obtaining related permits if required.
14.05	Identify equipment necessary for the removal of an adult, child or infant from a hospital, residence or other place of death.
14.06	Identify all equipment appropriate for any funeral service.
14.07	Identify the procedure for properly receiving those who make a visitation to the funeral home.
14.08	Identify the procedures for dressing and casketing the remains.
14.09	Identify the procedures for placing the deceased in a visitation room.
14.10	Identify equipment needed to accomplish interment, inurnment, and entombment.
14.11	Identify the procedures for the completion of insurance forms.
14.12	Complete the recording of information in a register book.
15.0	Apply business principles and practices to funeral service. – The student will be able to:
15.01	Prepare a financial memorandum pertaining to services provided, merchandise selected, cash advances, and supplemental items.
15.02	Define and properly use the terminology associated with funeral merchandise, merchandise display, and funeral supplies.
15.03	Identify, define, and describe the various types of outer enclosures.
15.04	Differentiate between Functional, Unit, Bi-Unit and Itemization methods of quoting the price(s) of funeral service.
15.05	Apply basic accounting principles in keeping mortuary records.
15.06	Identify the major items of income and expenses which should be included in the budget of a funeral home.
15.07	Define basic accounting terms.
15.08	Analyze financial data, make financial decisions, and recognize the effects of economies on existing funeral services.
15.09	Identify the dual role of the funeral director, and list the major responsibilities of each role.
15.10	Distinguish between the direct and indirect approaches in helping clients to select merchandise, and list the advantages and

	disadvantages of each method.
15.11	Identify the insurance needs of a funeral director, and funeral service practice.
15.12	Identify the application of the Federal Truth in Lending Act to funeral service.
15.13	Identify the importance of purchase disclosures.
15.14	Identify the applications of the Federal Wage and Hour Act to funeral service.
15.15	Distinguish a cognovit from a promissory note.
16.0	Recognize the importance of inter-professional and intra-professional relationship and responsibilities. – The student will be able to:
16.01	Identify common interest areas existing between funeral directors, florists, cemeterians, monument dealers, news media, the legal profession, the judiciary, hospital administrators, governmental agencies, and local police.
16.02	Identify common concerns inherent in physician-funeral director relationships.
16.03	Name the major funeral director associations.
16.04	Describe the structure and function of the International Conference of Funeral Service Examining Boards, Inc.
16.05	Describe the structure of "multi-unit" funeral home organizations-
16.06	Describe the structure and function of the Commission of Schools of the American Board of Funeral Service Education.
16.07	Describe the structure and function of the American Board of Funeral Service Education.
16.08	Describe the membership structure of the National Funeral Home Associations.
17.0	Recognize the procedures for becoming an active member of the community and participating in community affairs. – The student will be able to:
17.01	Identify the necessary items to be considered in establishing a funeral home-public relations program.
17.02	Distinguish between institutional and funeral home advertising and state the primary purpose of each.
18.0	Demonstrate and understanding of entrepreneurship. – The student will be able to:
18.01	Define entrepreneurship.
18.02	Describe the importance of entrepreneurship to the American economy.
18.03	List the advantages and disadvantages of business ownership.
18.04	Identify the risks involved in ownership of a business.

18.05 Identify the necessary personal characteristics of a successful entrepreneur.

18.06 Identify the business skills needed to operate a business efficiently and effectively.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The program must be accredited by the American Board of Funeral Service Educators and once completed a student may apply to the Division of Funeral, Cemetery and Consumer Services for their internship and to take the Florida Laws and Rules Exam to practice as a licensed embalmer or funeral director, according to Chapter 497 FS.

The intended outcomes are the same as the adopted curricular objectives of the American Board of Funeral Service Education which must be endorsed by accredited programs as curricular standards.

Upon completion of the associate in science in funeral service, graduates are qualified to write the National Funeral Service Board Examination. The program must be accredited by the American Board of Funeral Services Education, Inc., 14 Crestwood Road, Cumberland, Maine 04021 (207/829-5715) 497.000 F.S. ; 69K-15.002(1) F.A.C.

One year of internship is required in the State of Florida for the embalmer or the funeral director license. These internships may be served concurrently. Upon completion of the internship, students are eligible to write the Florida state examination for the embalmer and funeral director license.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Florida Funeral Director (0312030102) - 31 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Biotechnology Laboratory Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1341010100
Program Type	College Credit
Standard Length	61 credit hours
CTSO	HOSA: Future Health Professionals; Skills USA
SOC Codes (all applicable)	19-4021 Biological Technicians

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as Biotechnology Research Technicians, Biological Technicians (SOC Code 19-4021) or cell culture technicians or biotechnology manufacturing technician and/or to supply supplemental training for persons previously or currently employed in these occupation.

The content includes but is not limited to broad biology and chemistry concepts, algebraic and statistical analysis, basic microbiology concepts, biohazard and safety procedures, human anatomy and physiology or botany, core biotechnical laboratory techniques and industry workplace experience. It includes components designed to enhance critical thinking and technical communication skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 61 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate communication skills.
- 02.0 Demonstrate safety skills.
- 03.0 Demonstrate basic laboratory skills.
- 04.0 Demonstrate regulatory compliance.
- 05.0 Demonstrate appropriate decision making and problem solving techniques.
- 06.0 Demonstrate specific laboratory skills.
- 07.0 Demonstrate quality assurance/control.
- 08.0 Maintain facility and equipment.
- 09.0 Demonstrate knowledge and proper care/use of test animals/plants. (optional)
- 10.0 Demonstrate skills in bioinformatics. (optional)



**Florida Department of Education  
Student Performance Standards**

**Program Title:** Biotechnology Laboratory Technology  
**CIP Number:** 1341010100  
**Program Length:** 61 credit hours  
**SOC Code(s):** 19-4021

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate communication skills. -- The student will be able to:
01.01	Make professional oral and written presentations.
01.02	Comprehend and use correct scientific, technical and medical vocabulary.
01.03	Follow/analyze experimental and laboratory protocols.
01.04	Prepare identify and apply changes to control procedures.
01.05	Write or update manuals, SOP's protocols, reports and technical summaries.
01.06	Keep accurate laboratory records in notebooks or other approved mediums.
01.07	Perform computerized research and web searches, including, but not limited to Pub Med and identify basic reference resources in biotechnology, including, but not limited to original journal articles.
01.08	Recognize differences between primary scientific references and secondary information sources.
01.09	Perform basic applications in word processing, spread sheets, databases, presentations and project management.
01.10	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
02.0	Demonstrate safety skills. -- The student will be able to:
02.01	Identify and maintain first aid supplies, eye wash station, emergency shower, co-worker contact, medical information, emergency protection, chemical hygiene plan and evacuation plan.
02.02	Follow correct safety procedures, guidelines and chemical hygiene plans.
02.03	Maintain required environmental health, safety, and laboratory training.
02.04	Handle, store, and dispose of hazardous materials per appropriate MSDS, other safety guidelines, Worker Protection Standards (WPS), and/or appropriate regulatory guidelines (i.e. State, federal, local, accreditation, etc.).

02.05	Follow standard precautions for biological pathogen, both proper handling and disposal, and define principles of contamination control including standard and transmission based precautions.
02.06	Demonstrate procedures for declaring a laboratory emergency and/or responding with appropriate institutional procedures.
03.0	Demonstrate basic laboratory skills. -- The student will be able to:
03.01	Obtain and read protocol, test procedure, standard operating procedure (SOP), equipment manuals, and proper forms.
03.02	Prioritize and perform multiple tasks in a timely manner, based upon priorities communicated by supervisor.
03.03	Clean, organize and sterilize materials and laboratory instruments, when required.
03.04	Organization of supply inventory; date/label reagents and store promptly upon arrival.
03.05	Demonstrate knowledge of asepsis and practice procedures such as hand-washing and isolation.
03.06	Use titration/pipetting techniques; measure volume/weights.
03.07	Perform basic calculations, unit conversions, graphing of data and statistical analysis.
03.08	Calculate and prepare dilutions series.
03.09	Prepare solutions and reagents for laboratory use.
03.10	Monitor physical properties of reagents, buffers, media, and solutions and determine optimum conditions for use.
03.11	Obtain and review appropriate procedures and test forms, prepare for laboratory inspections and respond to the reports.
03.12	Collect and set up samples for analysis.
03.13	Perform general laboratory tests, including, setup equipment and perform/document tests and results.
03.14	Demonstrate knowledge of chemical cross-contamination control between reagents from weighing implements, storage containers and media.
03.15	Make estimations and approximations and judge the reasonableness of the result.
04.0	Demonstrate regulatory compliance. -- The student will be able to:
04.01	Follow guidelines from the appropriate regulatory, accreditation, and/or certification agencies, such as FDA, OSHA, USDA, NIH, NR, DOT, EPA, CDC, ISO/IEC, and NRC.
04.02	Comply with principles using current Good Experimental Practices and quality improvement systems (e.g., GXP; GLP, GMP, GCP).
05.0	Demonstrate appropriate decision making and problem solving techniques. -- The student will be able to:
05.01	Identify decision to be made and compare alternatives.

05.02	Make decisions based on accurate facts, data, and agreed-upon goals.
05.03	Evaluate the decision made.
05.04	Demonstrate ability to evaluate data and draw conclusions.
05.05	Diagnose problem, its urgency and causes, and documenting as appropriate.
05.06	Determine appropriate action, implement it and evaluate results.
06.0	Demonstrate specific laboratory skills. -- The student will be able to:
06.01	Perform various techniques associated with mammalian and/or insect cell culture, including isolation, maintenance, characterization, and storage of pure cultures.
06.02	Perform microbiology skills, which may include but are not limited to, plating techniques, isolating and characterizing cell lines, propagating cell lines, and cryogenic techniques.
06.03	Perform various genetic engineering techniques including but not limited to, transformation, transfection of mammalian, insect, and/or bacterial cells.
06.04	Perform bioassays.
06.05	Perform immunological techniques, including but not limited to, enzyme-linked immunosorbent assays, use of monoclonal and polyclonal antibodies, and Western blot techniques.
06.06	Perform various molecular biology techniques, including but not limited to isolation, quantitation, amplification, electrophoresis and hybridization of both RNA and DNA and construction of recombinant vectors.
06.07	Demonstrate an understanding of translation assays, DNA libraries and isotopic and non-isotopic labeling techniques.
06.08	Perform various protein techniques including but not limited to, separation, isolation, characterization, quantitation, monitoring protein stability, gel electrophoresis, concentration (filter and dialyze), and conduct enzyme activity assays.
06.09	Perform chemical assays including but not limited to measuring turbidity, viscosity, density, quantitative analysis, distillation techniques, titration techniques, employing dyes and indicators, lyophilization and organic chemistry techniques.
06.10	Demonstrate knowledge of instrument-based separation, including but not limited to various chromatography techniques and other separation methodologies (e.g. FACS).
06.11	Understand the principles underlying spectroscopic analysis.
07.0	Demonstrate quality assurance/control. -- The student will be able to:
07.01	Perform quality tests and document results.
07.02	Verify test standards and maintain QA records.
07.03	Archive samples and documents.
07.04	Inspect and verify integrity of product, procedure, and specimen.

07.05	Explain the role of statistical trend analysis for the release of final product.
07.06	Investigate complaints and take corrective action.
08.0	Maintain facility and equipment. -- The student will be able to:
08.01	Monitor/record the environmental condition of the facility (e.g., growth chamber, laboratory, greenhouse, storage room, animal room, freezers, or manufacturing site).
08.02	Notify appropriate personnel if sampling indicates a problem.
08.03	Clean work area according to SOPs.
08.04	Label equipment.
08.05	Check calibration and perform systems diagnostics.
08.06	Check and maintain equipment, logs and perform preventative maintenance tasks according to schedule and, operate laboratory equipment and instrumentation after familiarization with manuals and/or training.
09.0	Demonstrate knowledge and proper care/use of test animals/plants. (optional) - The student will be able to:
09.01	Demonstrate the special requirements of receiving and transporting animals.
09.02	Demonstrate the role of separate in-process, quarantine and release areas.
09.03	Follow SOP regarding care, monitoring, and preparation of diets.
09.04	Follow SOP regarding cleaning, maintenance and sterilization of cages.
09.05	Monitor animal health and keep health records/logs.
09.06	Follow USDA/IACUC guidelines for animal care.
09.07	Follow SOP regarding humane methods for properly restraining and handling animals.
09.08	Collect and process specimens; collect data and document result.
09.09	Perform various techniques associated with plant culture including but not limited to, grafting, cloning, and characterization.
09.10	Perform maintenance of plants for optimal growth.
09.11	Apply agrochemical safety.
09.12	Maintain and monitor insect populations.
09.13	Maintain plant growth media.

09.14	Perform additional agribiotechnology skills such as inoculating plant and/or soil with biological materials, gathering pollen and bundle pollinate, applying plant pesticides safely.
10.0	Demonstrate skills in bioinformatics. (optional) - The student will be able to:
10.01	Explain methods of DNA sequencing and explain parameters that measure DNA sequence quality.
10.02	Identify DNA sequences using Basic Local Alignment Search Tool (BLAST).
10.03	Discuss and give examples of single nucleotide polymorphisms (SNPs).
10.04	Use appropriate software to design assays of various nature not limited to polymerase chain reaction primer design, gene assembly reactions or synthetic biology techniques.
10.05	Explain and demonstrate how to use National Center for Biotechnology Information (NCBI) databases.
10.06	Perform advanced NCBI queries and align structures.
10.07	Use appropriate software to elucidate molecular structures.
10.08	Explain the concept of phylogenetic trees and discuss structure function relationships.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals and Skills USA are the intercurricular career and technical student organizations providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Biotechnology Specialist (0626120101) – 19 credit hours

Biotechnology Laboratory Specialist (0341010101) – 30 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Assisting Technology and Management  
**Career Cluster:** Health Science

AS	
CIP Number	1351060104
Program Type	College Credit
Standard Length	70 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9091 Dental Assistants

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as dental assistants 66002 (SOC code 31-9091), dental auxiliaries as practice managers, educational managers for dental companies, and dental assisting educators. The program will prepare students for the Dental Assisting National Board Examination as well as state requirements. The program should meet the requirements of the Commission on Dental Accreditation of the American Dental Association and standards recommended by the Florida Board of Dentistry.

The content includes but is not limited to dental and general anatomy, dental terminology, nutrition, microbiology, dental pharmacology and anesthesia, chairside assisting, expanded functions, dental office emergencies/CPR, dental radiography, maintenance and asepsis of dental operatory and instruments, dental instrument and equipment utilization, dental specialty procedures, basic dental laboratory procedures, dental materials, preventive dentistry, employability skills, leadership and human relations skills, ethics and jurisprudence, dental office and patient management, general studies, physical sciences, business principles, educational leadership, and communication skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.



## **Program Structure**

This program is a planned sequence of instruction consisting of 70 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the dental health care delivery system and dental health occupations.
- 02.0 Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas.
- 03.0 Describe the legal and ethical responsibilities of the dental health care worker.
- 04.0 Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts.
- 05.0 Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Use information technology tools. (Optional)
- 08.0 Explain the importance of employability skills.
- 09.0 Demonstrate knowledge of airborne and blood borne diseases.
- 10.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 11.0 Use dental terminology.
- 12.0 Identify structures and explain functions and pathologies of dental and general head and neck anatomy.
- 13.0 Identify principles of microbiology and disease prevention and perform infection control procedures.
- 14.0 Identify, describe, maintain and utilize dental instruments and equipment.
- 15.0 Record patient assessment and treatment data.
- 16.0 Identify the functions of pharmacology and anesthesia as they relate to dentistry.
- 17.0 Identify and perform dental radiographic procedures.
- 18.0 Identify properties and uses, and manipulate dental materials.
- 19.0 Perform chairside assisting for general dentistry and specialty procedures.
- 20.0 Describe principles and perform techniques of preventive dentistry.
- 21.0 Perform general dental business office procedures.
- 22.0 Demonstrate professionalism as a dental team member in the clinical setting.

### **The following Standards are Specialty Options:**

- 23.0 Demonstrate skills for educational methodologies and strategies.
- 24.0 Demonstrate skills necessary for marketing, sales, and educational programs for dental products.
- 25.0 Demonstrate knowledge of dental practice set up and management procedures.

Florida Department of Education  
Student Performance Standards

Program Title: Dental Assisting Technology and Management  
 CIP Number: 1351060104  
 Program Length: 70 credit hours  
 SOC Code(s): 31-9091

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate knowledge of the dental health care delivery system and dental health occupations. – The student will be able to:
01.01	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.
01.02	Describe the various types of dental health care providers and the range of services available.
01.03	Describe the composition and functions of a dental health care team.
01.04	Identify the general roles and responsibilities of the individual members of the dental health care team.
01.05	Identify the roles and responsibilities of the consumer within the dental healthcare system.
01.06	Explain the cause and effects of factors that influence the current delivery system of dental healthcare.
01.07	Discuss the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.
01.08	Discuss the history of dentistry.
02.0	Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas. – The student will be able to:
02.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Compose written communication using correct spelling, grammar, formatting and confidentiality and specific formats of letter writing.
02.05	Recognize components of medical and dental terminology and abbreviations.
02.06	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.

02.07	Recognize the importance of patient education regarding dental and health care.
02.08	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.09	Identify psychological considerations influencing communication and behaviors.
03.0	Describe the legal and ethical responsibilities of the dental health care worker. – The student will be able to:
03.01	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC and Rule 64B5-25 FAC applicable to practice by the dental health workers.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment. and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the patients' "Bill of Rights".
03.06	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA) and apply these standards to social media.
03.07	Distinguish between expressed, implied, and informed consent.
03.08	Explain the laws governing harassment, labor and employment.
03.09	Differentiate between legal and ethical issues in dentistry.
03.10	Describe a Code of Ethics consistent with the dental assisting profession.
03.11	Identify and compare personal, professional and organizational ethics.
03.12	Recognize the limits of authority and responsibility of dental health care workers including legislated scope of practice.
03.13	Recognize and report illegal and/or unethical practices of dental health care workers.
03.14	Recognize and report abuse including domestic violence and neglect.
03.15	Identify resources to victims of domestic violence.
03.16	Explain risk management.
04.0	Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts. – The student will be able to:
04.01	Develop a basic understanding of the structure and function of the body systems.
04.02	Identify common disorders related to each of the body systems.

04.03	Explain basic concepts of positive self-image, wellness, and stress.
04.04	Develop a wellness and stress control plan that can be used in personal and professional life.
05.0	Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
05.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
05.02	Identify and describe methods in medical error reduction and prevention in the dental healthcare setting.
05.03	Demonstrate an understanding of personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.04	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
05.05	Demonstrate procedures for the safe transport and transfer of patients.
05.06	Describe fire safety, disaster, and evacuation procedures.
05.07	Explain emergency procedures to follow in response to workplace accidents.
05.08	Demonstrate handwashing and the use of personal protective equipment used in dentistry.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Take and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain certification in basic life support (BLS), cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
07.0	Use information technology tools. (Optional) – The student will be able to:
07.01	Define terms and demonstrate basic computer skills.
07.02	Interpret information from electronic medical documents.
08.0	Explain the importance of employability skills. – The student will be able to:
08.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
08.02	Exemplify basic professional standards of dental healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
08.03	Prepare and maintain a professional portfolio to document knowledge, continued education, skills, and experience. (Optional)
08.04	Write an appropriate resume.

08.05	Conduct a job search and complete a job application form correctly.
08.06	Demonstrate competence in job interview techniques.
08.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.
08.08	Examine licensing, certification, and industry credentialing requirements.
09.0	Demonstrate knowledge of airborne and blood borne diseases. – The student will be able to:
09.01	Recognize emerging diseases and disorders.
09.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by airborne and blood borne pathogens.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by airborne and blood borne pathogens and the public education necessary to combat the spread of these diseases.
09.04	Identify community resources and services available to the individuals with diseases caused by airborne and blood borne pathogens.
09.05	Apply infection control techniques designed to prevent the spread of diseases caused by airborne and blood borne pathogens to the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.
09.06	Demonstrate knowledge of the legal aspects of AIDS, including testing.
10.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
10.01	Analyze attributes and attitudes of an effective leader to include emotional intelligence.
10.02	Recognize factors and situations that may lead to conflict.
10.03	Demonstrate effective techniques for managing team conflict.
11.0	Use dental terminology. -- The student will be able to:
11.01	Identify and define common dental terms.
11.02	Demonstrate the use of proper dental terminology in the dental environment.
12.0	Identify structures and explain functions and pathologies of dental and general head and neck anatomy. -- The student will be able to:
12.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, lymph nodes, nerves, and blood vessels.
12.02	Identify embryonic development of head, oral cavity, and teeth.
12.03	Identify teeth and their landmarks, and the morphological characteristics of each individual tooth.

12.04	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
12.05	Recognize and describe oral pathological conditions, related to the teeth and their supporting structures.
12.06	Recognize and describe developmental anomalies related to the teeth, face, and oral structures.
12.07	Describe and differentiate between normal and malocclusion.
12.08	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the oral cavity.
13.0	Identify principles of microbiology and disease prevention and perform infection control procedures. -- The student will be able to:
13.01	Differentiate between pathogenic and non-pathogenic microorganisms.
13.02	Describe pathogens and modes of disease transmission.
13.03	Differentiate between aseptic and non-aseptic environments.
13.04	Describe and apply methods of cleaning, disinfection, and sterilization.
13.05	Identify chemicals and their uses for controlling the spread of disease in the dental environment.
13.06	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.
13.07	Describe the duties of the dental office safety coordinator.
13.08	Demonstrate compliance with the OSHA Blood Borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.
13.09	Identify and manage hazardous chemicals and biomedical wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200), 64E-16 F.A.C., and Environmental Protection Agency regulations.
13.10	Define principles of infection control including standard and transmission based precautions.
13.11	Demonstrate knowledge of dental asepsis.
13.12	Implement appropriate hand hygiene procedures and use of protective barriers.
13.13	Demonstrate knowledge of surgical asepsis and isolation.
14.0	Identify, describe, maintain and utilize dental instruments and equipment.--The student will be able to:
14.01	Identify various types, functions and operations of dental operatory and laboratory equipment.
14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
14.03	Maintain dental operatory equipment and instruments.

14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
14.05	Seat and dismiss patients.
14.06	Operate oral evacuation devices and air/water syringe.
14.07	Maintain a clear field of vision including isolation techniques.
14.08	Perform a variety of instrument transfers to include four-handed dentistry.
14.09	Utilize appropriate chairside assistant ergonomics.
14.10	Assist with and place dental dams as permitted by Florida Statute and Florida Board of Dentistry Rule.
15.0	Record patient assessment and treatment data. -- The student will be able to:
15.01	Take and record medical-dental histories.
15.02	Record assessment of existing oral conditions.
15.03	Perform intraoral and extraoral photography.
15.04	Record conditions diagnosed by the dentist.
15.05	Record treatment-related data on the patient's clinical record.
15.06	Record treatment plan and treatment in patient's chart.
15.07	Perform a visual assessment of existing oral conditions.
15.08	Distinguish between and report subjective and objective information.
15.09	Report relevant information in order of occurrence.
16.0	Identify the functions of pharmacology and anesthesia as they relate to dentistry. -- The student will be able to:
16.01	Identify drug requirements, agencies, and regulations including prescribing regulations related to medications subject to addiction.
16.02	Distinguish among the five schedules of controlled substances.
16.03	Record a drug prescription in a patient's chart.
16.04	Utilize ratios and proportional problems to calculate prescribed drug dosages.
16.05	Identify drug actions, side effects, indications and contraindications; verify with Physician's Desk Reference (PDR) or its equivalent.

16.06	Identify common drugs used in dentistry.
16.07	Prepare and apply topical anesthetic agent.
16.08	Identify properties of anesthetics.
16.09	Prepare syringes for the administration of local anesthetics.
16.10	Monitor and identify precautions in the use of nitrous oxide-oxygen conscious sedation.
16.11	Calculate the percentage of nitrous oxide-oxygen delivered during a conscious sedation procedure.
16.12	Identify drugs and agents used for treating dental-related infection.
16.13	Identify and respond to dental office emergencies.
16.14	Describe the signs and symptoms of drug addiction.
16.15	Discuss the dental team's responsibility to recognize patients with drug addictions.
17.0	Identify and perform dental radiographic procedures -- The student will be able to:
17.01	Describe history, physics and biological effects of ionizing radiation.
17.02	Identify parts of the X-ray machine including accessories.
17.03	Demonstrate radiologic health protection techniques.
17.04	Describe dark room/processing procedures, mix solutions.
17.05	Describe the proper disposal of hazardous radiographic waste.
17.06	Place and expose dental radiographic films or phosphors and digital sensors.
17.07	Perform extraoral radiography as required for dental diagnostic procedures.
17.08	Identify radiographic anatomical landmarks and pathologies.
17.09	Mount radiographic surveys.
17.10	Describe how to maintain unexposed film inventory and storage.
17.11	Maintain digitally acquired radiographic images.
17.12	Practice infection control procedures for all radiographic procedures.



18.0	Identify properties and uses, and manipulate dental materials. -- The student will be able to:
18.01	Identify properties and uses and manipulate gypsum.
18.02	Identify properties and uses and manipulate restorative materials.
18.03	Identify properties and uses and manipulate dental cements.
18.04	Place and remove matrices as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.05	Place and remove temporary restorations as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.06	Identify properties and uses and manipulate impression materials.
18.07	Make intraoral impressions as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.08	Identify properties and uses and manipulate acrylics and thermoplastics.
18.09	Identify properties and uses and manipulate waxes.
18.10	Perform dental laboratory procedures to include the fabrication of casts, custom trays, whitening trays, temporary crowns, and bridges.
18.11	Identify and manage hazardous dental materials and wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200) and Environmental Protection Agency regulations.
18.12	Employ measurements of time, temperature, distance, capacity, and mass/weight during the manipulation of dental materials.
19.0	Perform chairside assisting for general dentistry and specialty procedures. -- The student will be able to:
19.01	Describe procedures, equipment, materials, and instrumentation used in the dental specialties to include but not limited to periodontics, endodontics, pedodontics, oral surgery, orthodontics, and prosthodontics.
19.02	Assemble tray set-ups for general and specialty dental procedures.
19.03	Assist in general and specialty dental procedures.
19.04	Describe the special needs of patients during dental procedures.
19.05	Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.
19.06	Describe procedures, equipment, and materials utilized in digital dentistry to include CAD/CAM Technology.
20.0	Describe principles and perform techniques of preventive dentistry. -- The student will be able to:
20.01	Describe the process of oral biofilm formation and its management through preventative dentistry.
20.02	Provide patient preventive education and oral hygiene instruction.

20.03	Prepare and set up for various preventive procedures.
20.04	Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.
20.05	Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.06	Clean and polish removable dental appliances.
20.07	Apply dental sealants as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.08	Identify the elements of nutrition, basic food groups, and acceptable diets as recommended by the U.S. Department of Agriculture.
20.09	Identify dietary deficiencies and dietary practices that contribute to the manifestation of symptoms in the oral cavity.
20.10	Identify community dental resources and services available.
21.0	Perform general dental business office procedures. -- The student will be able to:
21.01	Maintain appointment control.
21.02	Maintain an active recall system.
21.03	Prepare and maintain accurate patient records.
21.04	Prepare and maintain patient financial records, collect fees.
21.05	Demonstrate the use of dental procedure codes and current terminology when preparing and managing insurance claims.
21.06	Differentiate the different categories of dental procedure codes.
21.07	Prepare and maintain office financial records.
21.08	Prepare and maintain dental office inventory control and purchasing.
21.09	Demonstrate public relations responsibilities of the secretary/receptionist.
21.10	Demonstrate skills on office equipment.
21.11	Maintain the dental business office environment.
21.12	Receive and dismiss patients and visitors.
21.13	Demonstrate appropriate patient management/customer service skills.
21.14	Describe the effect of money management on practice goals.

22.0	Demonstrate professionalism as a dental team member in the clinical setting. – The student will be able to:
22.01	Perform dental assisting duties, dental assisting expanded functions, and dental radiographic procedures in a clinical setting under the direct supervision of a licensed dentist.
22.02	Interact with a professional dental team in the delivery of patient services.
22.03	Utilize employability skills.
<b>Specialty Option 1: Education</b>	
23.0	Demonstrate skills for educational methodologies and strategies. -- The student will be able to:
23.01	Develop and implement policies and operational procedures that meet the American Dental Association accreditation standards for Allied Dental Programs.
23.02	Identify and describe educational theory and methodology as they relate to Allied Dental Education.
23.03	Establish liaison with appropriate accrediting organizations, community partners, and educational institutions.
<b>Specialty Option 2: Product Marketing, Sales, and Educational Programs</b>	
24.0	Demonstrate skills necessary for marketing, sales, and educational programs for dental products. -- The student will be able to:
24.01	Establish educational programs relating the value and effectiveness of various dental products.
24.02	Apply economic principles for product marketing, distribution and sales.
24.03	Demonstrate effective product evaluation and comparison.
24.04	Identify appropriate consumer populations.
<b>Specialty Option 3: Dental Practice Management</b>	
25.0	Demonstrate knowledge of dental practice set up and management procedures. -- The student will be able to:
25.01	Establish policies and procedures for dental practice operations.
25.02	Identify roles and responsibilities of all employees.
25.03	Implement policies and procedures for establishing effective management of a dental practice.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Field Internship Activities: Clinical experiences are integrated with the didactic portion of this program. Clinical experience assisting a dentist must be an integral part of the educational program designed to perfect students' competence in performing dental assisting functions, rather than to provide basic instruction. The major portion of the students' time in clinical assignments must be spent assisting with or participating in patient care. Prior to clinical assignments, students demonstrate minimum competence in performing the procedures which they will be expected to perform in their clinical experience.

### Special Notes

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Certified Dental Assistant (DANBD001) – 5 credits

Dental assisting programs accredited by the American Dental Association Commission on Dental Accreditation are required to implement enrollment and admissions criteria that include the selection of adult students with a high school diploma, its equivalent, or an advanced degree.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the goals of TECH PREP and is based on the model developed by the Allied Health Articulation Task Force.

This program should meet the most current edition of the American Dental Association Accreditation Standards for Dental Assisting Education Programs. For further information, contact: Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611.

For Florida information contact the Florida Agency for Health Care Administration (AHCA), Division of Health Quality Assurance, Board of Dentistry, 4052 Bald Cypress Way, Tallahassee, FL 32399, 850/245-4161.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Pursuant to 466.024 F.S., 64B5-16.002 F.A.C. and 64B5-9.011 F.A.C., completers of the dental assisting program may be awarded a certificate verifying formal training which is required for the performance of certain remediable tasks (also known as expanded functions.)

Students should be encouraged to become members and participate in the activities of the professional organization: The American Dental Assistants Association.

Completers of the dental assisting program should be encouraged to take the Dental Assisting National Board (DANB) Certified Dental Assistant (CDA) exam. DANB is recognized by the American Dental Association as the national certification board for dental assistants.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Hygiene  
**Career Cluster:** Health Science

**AS**

CIP Number	1351060200
Program Type	College Credit
Standard Length	88 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2021 Dental Hygienists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as dental hygienists SOC Code-29-2021 Dental Hygienist or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to patient assessment, dental hygiene instrumentation and direct patient care services (scaling/root planing/curettage/radiographs/oral hygiene-instruction/expanded functions), community dental health, dental office emergencies, infection control, special needs dental care, office management, employability skills, ethics and jurisprudence.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 88 credit hours.

## **Regulated Programs**

Students are prepared to take the Dental Hygiene National Board and state licensure examinations. Dental Hygiene Programs accredited by the American Dental Association Commission on Dental Accreditation are required to implement clinical experiences outlined in these program standards.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the dental health care delivery system and dental health occupations.
- 02.0 Use oral and written communication skills in creating, expressing and interpreting information and ideas.
- 03.0 Describe the legal and ethical responsibilities of the dental health care provider.
- 04.0 Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts.
- 05.0 Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Use information technology tools.
- 08.0 Explain the importance of employability skills.
- 09.0 Demonstrate knowledge of infectious diseases.
- 10.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 11.0 Perform remediable tasks delegable to a dental hygienist as permitted by Florida Statutes/Law.
- 12.0 Perform dental office procedures.
- 13.0 Identify, describe, maintain and utilize dental instruments and equipment.
- 14.0 Identify and perform dental and radiographic procedures.
- 15.0 Identify properties and uses, and demonstrate manipulation of dental materials.
- 16.0 Identify, explain the formation and function of the head, neck, dental structures and tissues including pathological conditions of the human body in relation to the oral cavity.
- 17.0 Identify, explain principles of microbiology, disease transmission, disease prevention, and perform infection control procedures.
- 18.0 Explain usage, administration, indications, contraindications, adverse reactions and precautions of pharmaceutical and anesthetic agents used in the treatment of dental disease.
- 19.0 Describe principles and perform techniques of preventive dentistry.
- 20.0 Perform patient assessment.
- 21.0 Perform direct patient services and competently provide dental hygiene process of care for the child, adolescent, adult and geriatric patient as well as the special needs patient.
- 22.0 Implement and evaluate community health interventions and research activities.



Florida Department of Education  
Student Performance Standards

Program Title: Dental Hygiene  
 CIP Number: 1351060200  
 Program Length: 88 credit hours  
 SOC Code(s): 29-2021

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

Dental Hygiene Students completing the following intended outcomes (1- 22) have met the requirements of the Dental Hygiene Program and qualify to submit an application for the Dental Hygiene National Board and state licensure examinations.

01.0	Demonstrate knowledge of the dental health care delivery system and dental health occupations. – The student will be able to:
01.01	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.
01.02	Describe the various types of dental health care providers and the range of services available.
01.03	Describe the composition and functions of a dental health care team.
01.04	Identify the general roles and responsibilities of the individual members of the dental health care team.
01.05	Identify the roles and responsibilities of the consumer within the dental healthcare system.
01.06	Explain factors that influence the current delivery system of dental healthcare.
01.07	Explain the impact of current and emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.
01.08	Discuss the history of dentistry and dental hygiene.
01.09	Demonstrate knowledge in communicating and collaborating with other members of the health care team to support comprehensive patient care.
02.0	Use oral and written communication skills in creating, expressing and interpreting information and ideas. – The student will be able to:
02.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.

02.04	Compose written communication using correct spelling, grammar, formatting and confidentiality.
02.05	Recognize components of medical and dental terminology and abbreviations.
02.06	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
02.07	Recognize the importance of patient education regarding dental and health care.
02.08	Adapt communication skills to meet various levels of understanding and orientation of diversity including but not limited to sexual orientation, gender orientation, disability, age, culture, economics, ethnicity and religion.
02.09	Identify psychological considerations influencing communication and behaviors.
03.0	Describe the legal and ethical responsibilities of the dental health care provider. – The student will be able to:
03.01	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC and Rule 64B5-25 FAC applicable to practice by dental health providers.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the patients' "Bill of Rights".
03.06	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA), including but not limited to social media, and use of personal electronic devices in the workplace.
03.07	Distinguish between express, implied and informed consent.
03.08	Explain the laws governing harassment, labor and employment.
03.09	Differentiate between legal and ethical issues in dentistry.
03.10	Describe the dental profession's Code of Ethics.
03.11	Identify and compare personal, professional and organizational ethics.
03.12	Recognize the limits of authority and responsibility of dental health care workers including legislated scope of practice.
03.13	Recognize and report illegal and/or unethical practices of dental health care workers.
03.14	Recognize signs of abuse and neglect.
03.15	Demonstrate an understanding of reporting requirements for all types of abuse.
03.16	Identify resources for victims of abuse.

03.17	Define commonly used legal vocabulary relating to dentistry.
03.18	Describe ethical considerations/obligations in the dental team-patient relationship.
03.19	Explain risk management and root cause analysis.
03.20	Apply self-assessment skills to prepare for life-long learning.
03.21	Apply ethical principles, legal and regulatory concepts to resolve ethical dilemmas.
04.0	Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts. – The student will be able to:
04.01	Develop a basic understanding of the structure and function of the body systems.
04.02	Identify common disorders related to each of the body systems.
04.03	Explain basic concepts of positive self-image, wellness, and stress.
04.04	Describe a wellness and stress control plan that can be used in personal and professional life.
05.0	Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
05.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments, including the proper transport and transfer of patients.
05.02	Identify medical errors and describe methods to reduce and prevent errors in the dental healthcare setting.
05.03	Demonstrate an understanding of personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) regulations (including standard precautions).
05.04	Recognize Safety Data Sheets (SDS) and Globally Harmonized System (GHS) labels and comply with safety signs, symbols and labels.
05.05	Describe workplace preparedness and procedures for fire safety, disaster, and evacuation.
05.06	Explain procedures to follow for responding to, reporting, and recording workplace incidents.
05.07	Demonstrate handwashing and the use of personal protective equipment used in dentistry.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Take and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.

07.0	Use information technology tools. – The student will be able to:
07.01	Define terms and demonstrate basic computer skills.
07.02	Interpret and input information from electronic medical documents.
08.0	Explain the importance of employability skills. – The student will be able to:
08.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
08.02	Exemplify basic professional standards of dental healthcare providers.
08.03	Develop a professional resume and/or career portfolio.
08.04	Conduct a job search and complete a job application form.
08.05	Demonstrate effective job interview techniques.
08.06	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments, and career growth potential.
09.0	Demonstrate knowledge of infectious diseases. – The student will be able to:
09.01	Recognize emerging diseases and disorders.
09.02	Demonstrate knowledge of transmission and treatment of diseases caused by infectious agents or organisms.
09.03	Identify "at risk" behaviors that promote the spread of infectious diseases and the public education necessary to combat the spread of these diseases.
09.04	Identify community resources and services available to the individuals with infectious diseases.
09.05	Apply infection control techniques designed to prevent the spread of infectious diseases in the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.
09.06	Demonstrate knowledge of the legal aspects of treating patients with infectious diseases, including testing and proper documentation.
10.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
10.01	Analyze attributes and of effective leadership.
10.02	Recognize factors and situations that may lead to conflict.
10.03	Demonstrate effective problem-solving techniques for managing team conflict.
11.0	Perform remediable tasks delegable to a dental hygienist as permitted by Florida Statutes/Law. -- The student will be able to:
11.01	Demonstrate remediable delegable tasks to lab and/or clinical competence.

12.0	Perform dental office procedures. -- The student will be able to:
12.01	Maintain appointment control with effective time management skills.
12.02	Assess, create, modify, and maintain an active re-care system.
12.03	Prepare and maintain accurate patient records.
12.04	Demonstrate skills on office equipment to include computers and dental office management systems.
12.05	Utilize correct dental codes and nomenclature for procedures.
13.0	Identify, describe, maintain and utilize dental instruments and equipment. -- The student will be able to:
13.01	Identify and demonstrate the operation of dental operator and laboratory equipment.
13.02	Maintain dental operator equipment and instruments.
13.03	Identify and demonstrate the use of dental hygiene instruments.
14.0	Identify and perform dental and radiographic procedures. -- The student will be able to:
14.01	Describe history, physics and biological effects of ionizing radiation.
14.02	Identify parts of the radiographic imaging machine.
14.03	Demonstrate radiologic health protection techniques.
14.04	Perform radiographic procedures that include processing, utilization, and care of equipment.
14.05	Place image receptors, expose dental images, and understand the relevance of exposure settings, times and patient record keeping.
14.06	Identify radiographic anatomical landmarks.
14.07	Mount radiographic surveys and/or save and store digital files.
15.0	Identify properties and uses, and demonstrate manipulation of dental materials. -- The student will be able to:
15.01	Identify properties and uses and demonstrate manipulation of gypsum.
15.02	Identify properties and uses and manipulation of sealants and restorative materials.
15.03	Identify properties and uses and demonstrate manipulation of dental cements.
15.04	Identify properties and uses and demonstrate manipulation of impression materials.

15.05	Identify properties and uses and demonstrate manipulation of acrylics and/or thermoplastics.
15.06	Identify and demonstrate dental laboratory procedures as outlined by remediable tasks delegable to the dental hygienist by Florida Statute/Law.
16.0	Identify, explain the formation and function of the head, neck, dental structures and tissues including pathological conditions of the human body in relation to the oral cavity. -- The student will be able to:
16.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, lymph nodes, nerves, and blood vessels.
16.02	Identify embryonic development of the head, oral cavity, and teeth.
16.03	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
16.04	Describe and differentiate between normal and malocclusion.
16.05	Identify the elements of the chemical basis of life, cellular metabolism and the structure of the major tissue types of the human body.
16.06	Describe the metabolism of nutrient foods, vitamins and minerals by the human body and pathological conditions related to nutrient deficiencies.
16.07	Identify anatomical structures and physiological function of the principle systems of the human body including the skeletal, muscular, integumentary, circulatory, lymphatic, endocrine, digestive, reproductive, respiratory, urinary, and nervous systems.
16.08	Recognize and describe oral pathological conditions related to the teeth and their supporting structures.
16.09	Identify teeth and their landmarks, and the morphological characteristics of each individual tooth.
16.10	Recognize and describe developmental anomalies related to the head and oral structures.
17.0	Identify, explain principles of microbiology, disease transmission, disease prevention, and perform infection control procedures. -- The student will be able to:
17.01	Differentiate between pathogenic and non-pathogenic microorganisms.
17.02	Describe pathogens and modes of disease transmission.
17.03	Differentiate between aseptic and non-aseptic environments.
17.04	Perform aseptic handwashing technique.
17.05	Describe, apply and differentiate between methods of cleaning, disinfection and sterilization of the dental environment.
17.06	Recognize the need for and demonstrate the use of proper precautions for the prevention of disease transmission during all dental related procedures.
17.07	Identify the role of prokaryotic cells, eukaryotic cells, viruses, and bacteria in infections and mechanisms of diseases.
17.08	Identify the genetics of microbes including replication of DNA and protein synthesis, mutation and gene transfer.

18.0	Explain usage, administration, indications, contraindications, adverse reactions and precautions of pharmaceutical and anesthetic agents used in the treatment of dental disease. -- The student will be able to:
18.01	Identify the agencies responsible for drug regulations.
18.02	Document in a patients chart medication prescribed by the dentist.
18.03	Identify medication actions, side effects, indications and contraindications; verify with Physician's Desk Reference or its equivalent.
18.04	Describe the process of medication metabolism.
18.05	Identify pharmaceuticals and medicaments used in dentistry.
18.06	Recognize specific conditions in the oral cavity that may be caused by pharmaceutical agents.
18.07	Identify properties of anesthetics.
18.08	Identify the tissues innervated by each of the nerves associated with dental local and topical anesthesia.
18.09	Describe properties and mode of action of an effective local and topical anesthetic.
18.10	List systemic considerations in choosing a local and topical anesthetic.
18.11	Describe and demonstrate methods of administering topical and local anesthetics.
18.12	List potential local and systemic adverse reactions associated with local anesthetic administration.
18.13	Prepare armamentarium for administering local anesthetics for recognized techniques.
18.14	Document anesthetics administered and any adverse reactions in a patients chart.
18.15	Describe the monitoring process and identify precautions in the use of nitrous oxide-oxygen inhalation analgesia.
19.0	Describe principles and perform techniques of preventive dentistry. -- The student will be able to:
19.01	Identify, communicate, and instruct patients on applicable methods of preventive dentistry that utilize:
19.01.01	risk assessment
19.01.02	evidence based learning
19.01.03	individualized preventive care plans
19.01.04	motivational interviewing/counseling
19.01.05	training regarding health status and rationale for preventive care plan.
19.02	Identify properties and indications for use of anticariogenic treatments utilized in the community, home, and office.
19.03	Identify and demonstrate proper auxiliary aides based on individual patient needs.
19.04	Identify and describe deficiencies that manifest symptoms in the oral cavity and communicate applicable therapies.

19.05	Present dietary recommendations to address specific dental needs during nutritional counseling.
20.0	Perform patient assessment. -- The student will be able to:
20.01	Take, record, and correlate medical/dental history with dental hygiene treatment plan and services to be performed.
20.02	Take, record, and correlate vital sign observations with dental hygiene treatment plan and services to be performed.
20.03	Assess vital signs in order to reduce incidence of patient complications and medical emergencies.
20.04	Perform record and correlate extraoral and intraoral examination findings with dental hygiene care plan and patient services to be performed.
20.05	Observe and record existing restorations as well as conditions and suspected pathologies of hard and soft tissues using the appropriate armamentarium.
20.06	Perform a comprehensive periodontal examination which includes pocket depth, attachment level, recession, mobility, furcations, radiographic findings, and tissue health.
20.07	Consult with dentist and physicians to verify dental and medical information to develop and implement dental hygiene care plan.
20.08	Interpret and correlate dental radiographs and dental charting with dental hygiene treatment plan.
20.09	Perform soft tissue reassessment and evaluate the effects of initial dental hygiene therapy and make appropriate therapy modifications or referrals.
20.10	Identify oral manifestations that deviate from normal.
20.11	Document the diagnosis made by dentist.
20.12	Recognize and respond appropriately to contraindications for dental hygiene treatment found in medical and dental history.
20.13	Identify and assess dental office emergencies and follow the appropriate protocol for treatment.
21.0	Perform direct patient services and competently provide dental hygiene process of care for the child, adolescent, adult and geriatric patient as well as the special needs patient. -- The student will be able to:
21.01	Demonstrate all delegable dental hygiene clinical services within the scope of practice as permitted by Florida statute/law
21.02	Communicate to patients' appropriate post-operative instructions and correctly select all necessary self-care therapies intended to restore and maintain the patients' oral health.
21.03	Provide and communicate recommendations for patient use of caries prevention agents.
21.04	Provide a comprehensive collection of patient data to identify the physical and oral health status as well as risk factors that could affect patient care and healing.
21.05	Provide analysis of assessment findings and use of critical thinking in order to address the patient's dental hygiene treatment needs.
21.06	Establish a dental hygiene care plan that reflects the desired outcomes and treatment interventions to facilitate optimal oral health.



21.07	Present proposed treatment and procedures to the patient and obtain appropriate informed consent signatures prior to rendering patient care services.
21.08	Provide patient-centered treatment and evidence-based care in a manner minimizing risk and optimizing oral and systemic health.
21.09	Measure the extent to which desired outcomes identified in the dental hygiene care plan are achieved.
22.0	Implement and evaluate community health interventions and research activities. -- The student will be able to:
22.01	Demonstrate competence in assessment, planning, implementation, and evaluation of community health interventions.
22.02	Formulate and analyze research methodologies for community health interventions.
22.03	Perform a literature search and interpret research findings in scientific literature.
22.04	Apply research findings to dental hygiene care delivery.
22.05	Apply statistical analysis and evidence based research to health trends and community interventions.
22.06	Collaborate and perform a needs assessment with community partners.
22.07	Differentiate scientific value of literature found in both electronic and traditional mediums.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Equipment and supplies should be provided to enhance hands-on experiences for students. In depth clinical information and requirements can be found in the Commission on Dental Accreditation Dental Hygiene Standards.

### **Special Notes**

General education content must include oral and written communications, Psychology and Sociology.

Biomedical science content must include content in anatomy, physiology, chemistry, biochemistry, microbiology, immunology, general pathology and/or pathophysiology, nutrition and pharmacology.

Dental sciences content must include tooth morphology, head, neck and oral anatomy, oral embryology and histology, oral pathology, radiography, periodontology, pain management, and dental materials.

Graduates must be competent in providing the dental hygiene process of care which includes: Assessment, Planning, Implementation, and Evaluation.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Health Services Management  
**Career Cluster:** Health Science

**AS**

CIP Number	1351070101
Program Type	College Credit
Standard Length	60 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11-9111 Medical and Health Services Managers

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as health services managers. SOC Code 11-9111 (Medical and Health Services Managers) or health service administrators or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of management, introduction to computer literacy, health care organization, medical ethics, legal aspects, and advanced technical skills in a chosen health-related profession, health and safety, and CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 60 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Recognize and practice safety and security procedures.
- 05.0 Demonstrate information technology applications in healthcare.
- 06.0 Demonstrate employability skills.
- 07.0 Demonstrate basic knowledge of medical language, anatomy and physiology, and disease processes.
- 08.0 Demonstrate knowledge of materials and supplies needed in healthcare settings.
- 09.0 Demonstrate leadership and administrative skills basic to management in any health care facility.
- 10.0 Interpret federal, state and local laws as they apply to health care facilities.
- 11.0 Demonstrate knowledge of appropriate human resource management in healthcare.
- 12.0 Demonstrate knowledge of the economics involved in healthcare.

Florida Department of Education  
Student Performance Standards

Program Title: Health Services Management  
 CIP Number: 1351070101  
 Program Length: 60 credit hours  
 SOC Code(s): 11-9111

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the health care delivery system including public, private, government and non-profit.
01.02	Identify types of healthcare settings.
01.03	Identify the perspective of the health care consumer regarding healthcare.
01.04	Describe the composition and functions of a systemic healthcare team including those not based in the health care facility (e.g. medical device rep. and insurance claims adjuster).
01.05	Identify characteristics of effective teams and techniques for managing team conflict.
01.06	Analyze attributes and attitudes of an effective leader.
01.07	Explain both the positive and negative impacts of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop fundamental speaking and active listening skills.
02.02	Distinguish the differences between effective and ineffective communication practices.
02.03	Distinguish the differences between effective and ineffective online communication.
02.04	Recognize communication styles and barriers in both yourself and others and adjust accordingly for optimum application.
02.05	Use factual data to produce and deliver credible and understandable reports.
02.06	Compose written communication for various purposes using correct spelling, grammar, formatting and confidentiality.
02.07	Demonstrate appropriate situational communication by considering diverse cultures and lifestyles, medical conditions and generations.

03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
03.01	Discuss practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.02	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
03.03	Explain the “Patient’s Bill of Rights”.
03.04	Identify the intent, application and violations of the Health insurance Portability and Accountability Act (HIPAA).
03.05	Describe legal documents that allow patients and their guardians to document end-of-life care decisions ahead of time.
03.06	Describe the informed consent process.
03.07	Differentiate between legal and ethical issues in healthcare and the key components of personal, professional, and organizational ethics.
03.08	Recognize the limits of authority, responsibility, and reporting protocols within legal, ethical, and illegal practices.
04.0	Recognize and practice safety and security procedures. – The student will be able to:
04.01	Recognize national personal safety standards advocated by leading healthcare agencies and the necessary protocols to mitigate, manage, and report safety hazards.
04.02	Explain how medical errors might occur and describe ways to prevent or mitigate such errors.
04.03	Discuss appropriate regulatory and accrediting agency patient safety guidelines.
04.04	Demonstrate an understanding of the roles and responsibilities of the healthcare professional during manmade and natural disasters.
04.05	Understand benefits and correct method to put on and disrobe from personal protective equipment (PPE).
04.06	Identify risk management in healthcare settings.
05.0	Demonstrate information technology applications in healthcare. – The student will be able to:
05.01	Demonstrate the ability to use a computer to perform business practices such as word processing, spreadsheets, presentations, and database management.
05.02	Recognize current and changing technology applications in healthcare.
05.03	Discuss methods of communication to access and distribute data including patient portal, electronic messaging, Continuity of Care Documents (CCD) and Health Information Exchanges (HIE).
05.04	Interpret technological capabilities and challenges of Electronic Health Records (EHR) and applications in healthcare.
05.05	Demonstrate how health information is used for institutional and patient strategic planning, outcome assessment, and quality improvement.

05.06	Identify protected Patient Health Information (PHI) and methods for preventing PHI breaches and technology security.
05.07	Explain Meaningful Use as it relates to privacy, security, and access of patients' records.
06.0	Demonstrate employability skills. – The student will be able to:
06.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
06.02	Demonstrate basic professional standards of healthcare workers as they apply to hygiene, dress, language, and behavior (i.e. telephone & email etiquette, social media, courtesy, and self-introductions).
06.03	Identify necessary documents to compete a job application.
06.04	Write an effective resume.
06.05	Conduct a job search to include the required levels of education and credentialing, types of workplace settings, and career growth potential.
06.06	Identify skills for completing and conducting an interview.
07.0	Demonstrate basic knowledge of medical language, anatomy and physiology, and disease processes. – The student will be able to:
07.01	Demonstrate knowledge of medical and clinical terminology as relates to healthcare.
07.02	Describe the structure and function of different body systems.
07.03	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body.
07.04	Demonstrate an understanding of basic discharge and transfer procedures.
08.0	Demonstrate knowledge of materials and supplies needed in healthcare settings. – The student will be able to:
08.01	Prepare purchase orders with a focus on quality, price, and quantity required.
08.02	Demonstrate a working knowledge of an effective inventory management system.
08.03	Identify accounts payable practices.
09.0	Demonstrate leadership and administrative skills basic to management in any health care facility. – The student will be able to:
09.01	Identify current trends and sound management principles in order to facilitate change related to the management of healthcare organizations.
09.02	Identify the role, responsibilities and parameters for the various levels of management within the health care organizations.
09.03	State the control processes and techniques used to ensure that the objectives, strategies and policies of health care delivery are achieved effectively and efficiently.
09.04	Relate the various aspects of organizational dynamics (decision-making, motivation, leadership, and communication) to the needs and problems of health care organizations.



09.05	Relate personnel administration practices to the total scope of labor relations, including manpower acquisition, maintenance, and utilization.
09.06	Conduct needs analysis to identify and prioritize workflow requirements.
09.07	Identify methods to monitor internal and external customer satisfaction and implement improvements.
10.0	Interpret federal, state and local laws as they apply to health care facilities. – The student will be able to:
10.01	Cite federal, state and local institutional requirements.
10.02	List required standards and procedures for facility and staff.
10.03	Identify mandatory requirements regarding environmental health and safety standards.
10.04	Discuss the impact of legislative changes on health care facilities.
11.0	Demonstrate knowledge of appropriate human resource management in healthcare. – The student will be able to:
11.01	Prepare job descriptions.
11.02	Explain the laws governing harassment, labor and employment.
11.03	Illustrate employee satisfaction measurement and improvement techniques.
11.04	Demonstrate the understanding of the legal aspects of human resource management.
11.05	Prepare policy and procedure manuals.
11.06	Explain the components of an effective staff meeting.
11.07	Identify recruitment and retention strategies.
11.08	Demonstrate key components of a performance evaluation.
11.09	Identify methods to assess and develop orientation and training programs for personnel.
12.0	Demonstrate knowledge of the economics involved in healthcare. – The student will be able to:
12.01	Identify common methods, benefits and challenges of payment for healthcare services.
12.02	Demonstrate knowledge of reimbursement systems within a health care.
12.03	Identify billing and insurance terminology.
12.04	Demonstrate understanding of the process of utilization review.

12.05	Demonstrate knowledge of accounts receivable system that monitors and optimizes reimbursement.
12.06	Demonstrate knowledge of third party reimbursements including Center for Medicare/Medicaid Services (CMS) rulings and precedence to other payers.
12.07	Demonstrate basic knowledge of the procedures and purposes of medical documentation, medical billing and coding.
12.08	Demonstrate knowledge of the revenue cycle.
12.09	Explain government impacts to reimbursement (i.e. value-based payment models, government incentive programs, self-pay models, and HCAPS scores).
12.10	Identify volume and growth strategies for healthcare agencies.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

It is strongly recommended that hands-on practical experience be an integral part of the program.

### **Special Notes**

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The curriculum content must include: courses in management, personnel relations and management, governmental standards, and regulation of health care administration in diverse health care settings.

The theory base is built upon supportive courses available to students in the community college setting. Such courses shall include, but not be limited to, business communication, social science, business, mathematics, and computer application.

Graduates may be eligible to apply to take the National Administrators Board examination and the State Board licensing examination for licensure as a nursing home administrator in the State of Florida if they hold an advanced 4-year degree or meet the requirements of a Baccalaureate degree at an institution of higher learning.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Health Care Services Specialist (0351070102) – 27 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Health Information Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351070700
Program Type	College Credit
Standard Length	70 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as Health Information Technicians, Medical Record Technicians SOC Code 29-2071 (Medical Records and Health Information Technicians), or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to health information management, ethical and medico-legal aspects, computer information technology for health records, biomedical sciences, including anatomy and physiology, medical terminology, pharmacology and pathophysiology, health record science, computer applications, word processing, data base management, and spreadsheet, health data content, analysis and structure, statistics and data literacy, coding, clinical classification systems, reimbursement methodologies, quality assessment and performance improvement, health care delivery systems, indexing, organization and supervision, professional practice experience, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 70 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

Standards 1-12 comprise the HIT Core:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.

**In addition, students will complete the objectives in one of the following specialization tracks:**

Standards 13-20 must be completed by students specializing in the Medical Information Coder/Biller CCC or Medical Coder/Biller CCC or ATD Track:

- 13.0 Describe the anatomy and physiology of the human body.
- 14.0 Demonstrate proficiency in the application of medical terminology.
- 15.0 Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology.
- 16.0 Demonstrate proficiency in the use of ICD and HCPCS/CPT coding systems, both manual and automated.
- 17.0 Perform coding complexities proficiently.
- 18.0 Explain the significance of health information services as it relates to the medical coder/biller.
- 19.0 Demonstrate professional and ethical behavior of a medical coder/biller.
- 20.0 Perform healthcare revenue cycle management processes.

Standards 21-29 must be completed by students specializing in the HealthCare Informatics Specialist CCC Track:

- 21.0 Examine the various informatics related disciplines.
- 22.0 Demonstrate ethical and legal principles with regard to the role of the informatics specialist.
- 23.0 Apply appropriate resources in healthcare informatics to retrieve and analyze relevant information.
- 24.0 Manage health data processes and systems.
- 25.0 Analyze healthcare statistics, including research and performance improvement.
- 26.0 Perform appropriate information technology and systems functions.
- 27.0 Perform project management principles and best practices.

- 28.0 Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems.
- 29.0 Perform proficiently in the application and integration of healthcare informatics concepts and skills through practical lab experiences.

Standards 30-36 must be completed by students specializing in the Medical Record Transcribing/Healthcare Documentation - ATD Track:

- 30.0 Utilize appropriate medical and scientific terminology.
- 31.0 Apply concepts of disease, diagnosis, and treatment of the human body.
- 32.0 Apply rules of English grammar and punctuation.
- 33.0 Utilize medical references.
- 34.0 Apply healthcare documentation technology.
- 35.0 Perform functions specific to the medical transcription/healthcare documentation specialist.
- 36.0 Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences.

Students must complete at least one of the specialization tracks above and standards 37-38 to obtain the Health Information Technology A.S. degree.

- 37.0 Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems.
- 38.0 Utilize organizational resources.

Florida Department of Education  
Student Performance Standards

Program Title: Health Information Technology  
 CIP Number: 1351070700  
 Program Length: 70 credits  
 SOC Code(s): 29-2071

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate an understanding of healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Provide health information education to internal/external stakeholders.



02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:

09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
<b>Standards 13-20 must be completed by students specializing in the Medical Information Coder/Biller CCC or Medical Coder/Biller ATD Track:</b>	
13.0	Describe the anatomy and physiology of the human body. – The student will be able to:
13.01	Describe the structure and function of the respiratory system.

13.02	Describe the structure and function of the circulatory system.
13.03	Describe the structure and function of the musculoskeletal & connective tissue system.
13.04	Describe the structure and function of nervous and sensory systems.
13.05	Describe the structure and function of the reproductive system.
13.06	Describe the structure and function of the urinary system.
13.07	Describe the structure and function of the digestive system.
13.08	Describe the structure and function of the endocrine system.
13.09	Describe the structure and function of the integumentary system.
13.10	Describe major psychiatric disorders.
14.0	Demonstrate proficiency in the application of medical terminology. – The student will be able to:
14.01	Identify word parts of medical terminology in daily use.
14.02	Build, spell and pronounce correctly, appropriate terms from word parts learned and be able to give the meaning of the word.
14.03	Identify word parts and be able to build, spell and understand new words with those parts.
14.04	Spell and use medical abbreviations.
14.05	Identify terminology specific to healthcare settings including surgical, medical, and therapeutic.
14.06	Apply medical reference sources.
15.0	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology. – The student will be able to:
15.01	Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
15.02	Demonstrate an understanding of the general pathogenesis and morphology of disease and its role in the disease process.
15.03	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
15.04	Identify and use diagnostic test terminology.
16.0	Demonstrate proficiency in use of ICD and HCPCS/CPT coding systems, both manual and automated. – The student will be able to:
16.01	Apply conventions and guidelines used in coding.

16.02	Describe the process to update coding resources.
16.03	Assign and/or verify diagnosis, procedure, HCPCS level II codes, and applicable modifiers and groupings in accordance with official guidelines.
16.04	Utilize ICD-CM, ICD-PCS, CPT (all sections), and HCPCS Level II code sets to assign diagnosis and procedure codes to intermediate and advanced case studies and authentic health records/abstracts.
16.05	Describe components of revenue cycle management and clinical documentation improvement including quality indicators as it relates to coding.
16.06	Identify any discrepancies, incomplete information, and/or poor documentation practices in relation to coding while following appropriate departmental policies for correcting errors or improving documentation practices.
17.0	Perform coding complexities proficiently. – The student will be able to:
17.01	Apply advanced coding concepts to complex authentic health records/abstracts and/or case studies across the continuum of care.
17.02	Analyze case-mix, severity of illness systems, and coding quality monitors and reporting.
17.03	Utilize a variety of simulated patient records from across the continuum of care, interpret data, and assign and/or verify codes.
17.04	Analyze the various classification systems.
18.0	Explain the significance of health information services as it relates to the medical coder/biller. – The student will be able to:
18.01	Describe the functions of a health information management department and how this department interacts with the medical coder/biller.
18.02	Describe the development of the health record to include all types used in the current industry.
18.03	Explain the importance of the health record in relation to state and federal agencies, including compliance area.
19.0	Demonstrate professional and ethical behavior of a medical coder/biller. – The student will be able to:
19.01	Explain the scope of work of the Medical Coder/Biller.
19.02	Demonstrate ethical coding practices as outlined by professional associations.
20.0	Perform healthcare revenue cycle management processes. – The student will be able to:
20.01	Prepare and submit applicable payer claims.
20.02	Analyze various payer types.
20.03	Perform patient accounting functions including claims, denials, rejections, appeals, collections, and payment resubmission using applicable software.
20.04	Describe characteristics of reimbursement methodology systems across the continuum of care.

20.05	Analyze charge master and superbill maintenance.
20.06	Understand compliance strategies and reporting as well as regulatory guidelines.
<b>Standards 21-29 must be completed by students specializing in the HealthCare Informatics Specialist CCC Track:</b>	
21.0	Examine the various informatics related disciplines. – The student will be able to:
21.01	Identify the development of the informatics discipline, including the present industry environment and future trends.
21.02	Demonstrate comprehensive knowledge of health data standards for implementation of health information systems.
22.0	Demonstrate ethical and legal principles with regard to the role of the informatics specialist. – The student will be able to:
22.01	Apply the Code of Ethics to informatics as it relates to professional organizations.
22.02	Explain the scope of work of the healthcare informatics specialist.
23.0	Apply appropriate resources in healthcare informatics to retrieve and analyze relevant information. – The student will be able to:
23.01	Demonstrate the ability to identify credible informatics resources relevant to the content, applications, and assignments.
23.02	Utilize case studies and best practices in informatics projects and course work.
24.0	Manage health data processes and systems. – The student will be able to:
24.01	Oversee the collection and maintenance of health data, data sets, quality indicators, and databases.
24.02	Apply policies and procedures to health informatics processes.
24.03	Maintain and verify data quality, standards, and data sources for all health information systems across the continuum of care.
25.0	Analyze healthcare statistics, including research and performance improvement. – The student will be able to:
25.01	Abstract and maintain data for clinical indices/databases/registries.
25.02	Model data as representative visual information to achieve desired outcomes.
25.03	Calculate basic descriptive, institutional, and healthcare statistics.
25.04	Identify common research methods in accordance with Institutional Review Board (IRB) processes and policies.
25.05	Utilize technologies for trend analysis, end user support, decision making, and strategic planning.
25.06	Report data for facility wide quality management and performance improvement programs.

26.0	Perform appropriate information technology and systems functions. – The student will be able to:
26.01	Demonstrate advanced proficiency in using such as spreadsheets and databases in the execution of projects and presentations.
26.02	Utilize specialized software in processes affiliated with treatment, payment, and operations (TPO).
26.03	Apply policies and procedures to facilitate the use of electronic health record (EHR), personal health record (PHR), public health, and other applications and networks.
26.04	Apply knowledge of data base modeling to meet departmental needs.
26.05	Utilize and maintain appropriate electronic or imaging technology for data/record storage.
26.06	Perform queries and generate reports to facilitate decision making.
26.07	Utilize tools and techniques for retention, archiving, and destruction of information in accordance with current requirements and standards in multiple formats.
26.08	Protect data integrity and validity using software and hardware technology.
27.0	Perform project management principles and best practices. – The student will be able to:
27.01	Demonstrate an understanding of the general principles and tools of informatics project management.
27.02	Demonstrate abilities related to team work, project resource allocation, and problem resolution associated in a healthcare informatics project.
28.0	Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems. – The student will be able to:
28.01	Apply standard selection processes for health information systems using best practices.
28.02	Implement information technologies across the healthcare continuum of care.
28.03	Identify technological and changing management issues and problem resolution associated with health information systems.
28.04	Benchmark S.M.A.R.T. goals for projects.
28.05	Map workflow and process assessment as it pertains to information technology.
28.06	Summarize information systems theory.
28.07	Describe strategic planning for implementation of health information systems.
28.08	Identify security risks including physical, virtual, and network areas.
28.09	Take part in end-user training sessions, including planning training sessions and development of training material.
28.10	Examine the influence and scope of health information system practices on a national and international scale.

28.11	Oversee user access logs/audit trails to track history of access to and disclosure of identifiable patient data.
29.0	Perform proficiently in the application and integration of healthcare informatics concepts and skills through practical lab experiences. – The student will be able to:
29.01	Model the role and responsibilities of the health informatics specialist as team leader and/or project manager.
29.02	Apply knowledge and skills related to the health information systems, personnel, equipment, and resources.
29.03	Perform real-world applications of healthcare informatics principles and best practices.
<b>Standards 30-36 must be completed by students specializing in the Medical Record Transcribing/Healthcare Documentation ATD Track</b>	
30.0	Utilize appropriate medical and scientific terminology. – The student will be able to:
30.01	Spell, define and pronounce medical words and their components.
30.02	Define and use medical abbreviations, brief forms, acronyms, eponyms, and foreign words and phrases commonly used in healthcare practice.
30.03	Identify and use the medical terminology related to the structure and function of the human body.
30.04	Identify, pronounce, spell, and define pharmacological terminology.
30.05	Distinguish between or among medical homophones (sound-alikes), commonly confused medical terms, and synonyms.
31.0	Apply concepts of disease, diagnosis, and treatment of the human body. - The student will be able to:
31.01	Identify and explain structure and function of the human body in health and in disease.
31.02	Identify disorders and treatments of the human body.
31.03	Identify and explain procedures and technologies, imaging, laboratory, pathology, and their application to diseases and disorders.
31.04	Demonstrate knowledge of pharmacology to include indications and contraindications, dosage, methods of administration, interactions and side effects.
31.05	Organize surgical procedures and other interventional diagnostic and treatment modalities by specialty, indications or related diagnoses, technique, and typical findings.
32.0	Apply rules of English grammar and punctuation. – The student will be able to:
32.01	Recognize and use the principal parts of speech.
32.02	Recognize and use punctuation marks.
32.03	Apply rules of numerical expression.
32.04	Apply rules of capitalization.

32.05	Define and use abbreviations.
32.06	Demonstrate ability to spell words in common usage.
32.07	Evaluate and use reliable resources for research and practice.
32.08	Apply correct medical style as defined by authorities (i.e. AHDI Book of style, AMA Manual of Style).
32.09	Edit and proofread healthcare documentation.
32.10	Recognize and use report formats.
33.0	Utilize medical references. – The student will be able to:
33.01	Utilize medical dictionaries and specialty word books.
33.02	Utilize trade, generic and chemical drug names utilizing reference sources.
33.03	Utilize diagnostic test terminology.
33.04	Utilize appropriate resources located on the internet.
34.0	Apply healthcare documentation technology. – The student will be able to:
34.01	Demonstrate keyboarding skills with an awareness of productivity and accuracy standards and definitions.
34.02	Demonstrate use of transcription, dictation, and speech recognition technology.
34.03	Accurately transcribe and/or edit a required minimum number of reports to include history and physical, consultations, discharge summaries, operative reports and special reports, applying competencies specified in the areas of English Language, Medical Knowledge, Technology, Healthcare Documentation, and Professional Practice.
34.04	Demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
34.05	Identify inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
34.06	Demonstrate advanced use of word processing programs, including commands for editing, file organization, and retrieval.
34.07	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
34.08	Demonstrate a general knowledge of health information systems including the functions related to dictation/transcription integration, editing, and common terminology.
35.0	Perform functions specific to the medical transcriptionist/ healthcare documentation specialist. – The student will be able to:
35.01	Promote common health information policies and procedures for security specific to the role of the medical transcriptionist/ healthcare documentation specialist.



35.02	Demonstrate workstation ergonomics specific to the medical transcriptionist/ healthcare documentation specialist
35.03	Demonstrate an awareness of the opportunities in medical transcription/healthcare documentation and related careers and the importance of professional development.
35.04	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
35.05	Explain the scope of work of the medical transcriptionist/healthcare documentation specialist.
35.06	Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).
36.0	Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences. – The student will:
36.01	Model the role and responsibilities of the healthcare documentation transcription specialists.
36.02	Apply knowledge and skills related to speech recognition, dictation, documentation standards, technology, and transcription.
36.03	Perform real-world applications of healthcare documentation/transcription principles and best practices.
36.04	Analyze errors and devise corrective strategies.
36.05	Transcribe and/or edit a minimum 2100 minutes of authentic clinician-generated documentation.
<b>Students must complete at least one of the specialization tracks above and standards 37-38 to obtain the Health Information Technology A.S. degree.</b>	
37.0	Collaborate in the planning, design, selection, implementation, integration, testing, and support for health information systems. – The student will be able to:
37.01	Apply standard selection processes for health information systems using best practices.
37.02	Implement information technologies across the continuum of care.
37.03	Identify technological and change management issues and problem resolution associated with health information systems.
37.04	Benchmark S.M.A.R.T. goals for projects.
37.05	Map workflow and process assessment as it pertains to information technology.
37.06	Summarize information systems theory.
37.07	Describe strategic planning for implementation of health information systems.
37.08	Provide information for strategic planning.
37.09	Identify security risks including physical, virtual, and network areas.
37.10	Examine the influence and scope of health information system practices on a national and international scale.

37.11	Oversee user access logs/audit trails to track history of access to and disclosure of identifiable patient data.
38.0	Utilize organizational resources. – The student will be able to:
38.01	Demonstrate fundamental leadership skills.
38.02	Identify the impact of change on processes, people, and systems.
38.03	Identify human resources and productivity standards for organizational best practices.
38.04	Utilize data-driven performance improvement techniques to achieve desired outcomes.
38.05	Utilize financial management tools and processes to meet organizational goals.
38.06	Identify policies and strategies that address information governance to include the creation, use, storage, and exchange of data.
38.07	Apply strategies that support a culture of diversity and inclusion.
38.08	Implement legal and regulatory requirements related to the health information infrastructure.
38.09	Take part in privacy, security, and confidentiality training programs.
38.10	Identify and recommend solutions to potential compensable events.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The following ATD programs have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Medical Coder/Biller -- ATD (0351070705/0351070703) – 26 credits

Medical Record Transcribing/HealthCare Documentation -- ATD (0351070706/0351070704) – 15 credits

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Certified Medical Transcriptionist (AFHDI001) – 3 credits

The program should meet the program standards and guidelines of the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The program should encompass the AHIMA established knowledge clusters and entry-level competencies for Registered Health Information Technicians (RHIT's). It prepares the student to take the AHIMA national certification examination for Registered Health Information Technicians (RHIT).

This program should be taught in accordance with the accreditation standards of: the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), 233 North Michigan Ave., 21<sup>st</sup> Floor, Chicago, IL 60601-5800 (312/233-1100)

Students should be encouraged to join the (AHIMA) American Health Information Management Association and/or (AAPC) American Academy of Professional Coders and participate in the state/local association.

Outcomes 01-11 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Healthcare Informatics Specialist (0351070711) – 18 credit hours

Medical Information Coder/Biller (0351070707) – 34 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Clinical Research Professional  
**Career Cluster:** Health Science

**AS**

CIP Number	1351071902
Program Type	College Credit
Standard Length	60 credit hours
CTSO	HOSA
SOC Codes (all applicable)	11-9121 Natural Science Manager 11-9111 Medical and Health Services Manager 11-9199 Manager All Other 30-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as clinical research coordinators. SOC Code 11-9121 (Natural Science Manager), 11-9111 (Medical and Health Services Manager), 11-9199 (Manager All Other), or 31-9099 (Healthcare Support Workers, All Other) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of management, introduction to computer literacy, health care organization, medical ethics, legal aspects, and advanced technical skills in a chosen health-related profession, health and safety, and CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 60 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate basic knowledge of medical language, anatomy and physiology.
- 02.0 Identify and apply basic knowledge of different aspects of wellness.
- 03.0 Demonstrate knowledge of funding and site sponsorship related to clinical research including: public/private grants and contract and lifecycles of clinical trials.
- 04.0 Demonstrate knowledge of the guidelines and regulations governing clinical trials.
- 05.0 Demonstrate ability to work as a clinical research professional.
- 06.0 Demonstrate knowledge of the compliance and monitoring issues in clinical research.
- 07.0 Demonstrate knowledge of the research process including: consent, screening, phases of clinical trials, product development and adverse events and safety.
- 08.0 Demonstrate knowledge of current events in the field of public health.
- 09.0 Demonstrate the ability to identify U.S. health care delivery funding sources.
- 10.0 Demonstrate knowledge of the principles and language of pharmacology, including drugs and drug classes, diagnostic tests, indications, techniques.

Florida Department of Education  
Student Performance Standards

Program Title: Clinical Research Professional  
 CIP Number: 1351071902  
 Program Length: 60 credit hours  
 SOC Code(s): 11-9121, 11-9111, 11-9199, 31-9099

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate basic knowledge of medical language, anatomy and physiology. – The student will be able to:
01.01	Define, describe and discuss anatomic descriptive terms of the body.
01.02	Demonstrate an understanding of basic patient discharge and transfer procedures.
01.03	Describe common abbreviations and commonly used medical terms and their proper usage.
01.04	Define and describe anatomic names of bones and organs of the body.
02.0	Identify and apply basic knowledge of different aspects of wellness. – The student will be able to:
02.01	Discuss integrating health living into one’s lifestyle.
02.02	Define: physical fitness, mental health, nutrition, tobacco usage, alcohol consumption, illicit drug use, family living and how these factors connect with the concepts of wellness on a personal level.
02.03	Identify the risk factors for cardiovascular disease.
02.04	Describe the effects of tobacco and smoking on the human body.
02.05	Describe the various fitness methods to improve health.
02.06	Discuss the effects of nutrition on health and wellness.
02.07	Explain body composition and achieving a healthy weight.
02.08	Describe stress management strategies.
02.09	Discuss the use and abuse of illicit drugs in society.
02.10	Describe the effects of chronic disease on the human body.

03.0	Demonstrate knowledge of funding and site sponsorship related to clinical research including: public/private grants and contracts and lifecycles of clinical trials. – The student will be able to:
03.01	Describe key concepts and skills used in the site-sponsor relationship.
03.02	Classify clinical research funding sources and the protocols used to secure funding.
03.03	Discuss basic constructs related to grants & contracts management in clinical research.
03.04	Provide examples of the types of lifecycles of clinical trials.
03.05	Define the terms and language used in startup & closing Items on clinical research.
03.06	Determine communication methods to be used in the startup and closing of items in clinical research.
04.0	Demonstrate knowledge of the guidelines and regulations governing clinical trials. – The student will be able to:
04.01	Understand the array of guidelines & regulations governing clinical trials.
04.02	Describe the various HIPPA Privacy & clinical research privacy issues.
04.03	Identify the major GCP/ICH guidelines related to working with human subjects in research.
04.04	Discuss the various sources and uses of essential documents generated from clinical studies.
04.05	Explain the role of compliance in maintaining fidelity to a study protocol.
04.06	Provide examples of a standard response to a request for documentation of meeting award conditions.
04.07	Understand the array of analysis techniques used in interpreting research findings.
05.0	Demonstrate ability to work as a clinical research professional. – The student will be able to:
05.01	Identify clinical and behavioral research settings where Clinical Research Professionals are employed.
05.02	Demonstrate an understanding of the essential duties of a Clinical Research Professional.
05.03	Describe procedures and processes used to protect research participants at placement site.
05.04	Discuss the core research activities of placement site.
05.05	Demonstrate an understanding of how placement site works with: local, county, state and federal agencies to carry out their research activities.
05.06	Evaluate the role of Clinical Research Professionals in research settings.
05.07	Demonstrate the skills necessary to be a productive member of a research team including; working on a multidisciplinary research team and demonstrating an ability to work with confidential research participant information.



06.0	Demonstrate knowledge of the compliance and monitoring issues in clinical research. – The student will be able to:
06.01	Describe the role of compliance in clinical research.
06.02	Identify issues related to compliance in human subject's research.
06.03	Explain activities associated with monitoring within the scope of clinical research.
06.04	Discuss processes used to resolve issues that may arise from monitoring as part of a clinical trial.
06.05	Provide examples of quality assurance audits used in clinical research and discuss their value in relation to performing research with human subjects.
06.06	Define the types of inspections clinical research facilities are subject to.
07.0	Demonstrate knowledge of the research process including: consent, screening, phases of clinical trials, product development and adverse events and safety. – The student will be able to:
07.01	Accurately describe the processes involved in clinical research.
07.02	Define and describe issues associated with participant consent.
07.03	Explain the goals, limitations and basic rules for screening participants.
07.04	Discuss market and social aspects of product development (drugs & devices).
07.05	Discuss impacts of clinical trial stakeholders.
07.06	Accurately describe how epidemiology is used in clinical research.
07.07	Explain the relationship between essential processes related to adverse events & safety.
08.0	Demonstrate knowledge of current events in the field of public health. – The student will be able to:
08.01	Identify outlets (news, media, governmental) used to communicate public health events to the general public.
08.02	Describe the implications of current events on public health.
08.03	Discuss concerns related to how public health information is relayed to the public.
08.04	Recognize how reporting of global events (e.g. epidemics, regime change, and weather events) has the potential to impact other areas.
08.05	Locate emerging public health trends.
08.06	Explain etiology of emerging public health trends discussed throughout semester.
08.07	Discuss legislation designed to protect the public's right to information during major health events (epidemics, terrorism, natural disasters).

09.0	Demonstrate the ability to identify U.S. health care delivery funding sources. – The student will be able to:
09.01	Demonstrate an understanding of the evolutionary perspective of health services and its relevance with the existing healthcare system, facilities and services.
09.02	Explain the social, political, and public policy implications of health-related issues, such as availability, cost, delivery, and financing.
09.03	Describe the various health care organizations and service delivery options.
09.04	Identify the major health professions and explain the role of each and their licensing/educational requirements.
09.05	Compare and contrast the health care delivery systems of the U.S. with other major industrialized nations.
09.06	Understand the array of career choices in the health care sector of the economy.
10.0	Demonstrate knowledge of the principles and language of pharmacology, including drugs and drug classes, diagnostic tests, indications, and techniques. --The student will be able to:
10.01	Describe pharmacological principles.
10.02	Classify routes of administration.
10.03	Describe the relationships of drug classes with disease processes and medical specialties.
10.04	Recognize commonly prescribed medications.
10.05	Use appropriate pharmacological and laboratory references.
10.06	Describe indications, actions, dosages, and routes of administration.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Clinical Research Coordinator (0351071901) – 30 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Assisting Advanced  
**Career Cluster:** Health Science

**AS**

CIP Number	1351080103
Program Type	College Credit
Standard Length	65 credit hours
CTSO	HOSA
SOC Codes (all applicable)	31-9092 Medical Assistants 31-9099 Healthcare Support Workers, All Other 43-4171 Receptionists and Information Clerks 31-9097 Phlebotomists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

This program is designed to prepare students for employment as medical assistants SOC 31-9092.

The content includes but is not limited to communication, transcultural communication in healthcare, interpersonal skills, legal and ethical responsibilities, health-illness concepts, administrative and clinical duties, emergency procedures including CPR and first aid, emergency preparedness, safety and security procedures, medical terminology, anatomy and physiology, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 65 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate proper use of medical terminology.
- 13.0 Demonstrate knowledge of legal and ethical responsibilities for medical assistants.
- 14.0 Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states.
- 15.0 Demonstrate basic clerical/medical office duties.
- 16.0 Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy.
- 17.0 Discuss phlebotomy in relation to the health care setting.
- 18.0 Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist.
- 19.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 20.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 21.0 Practice infection control following standard precautions.
- 22.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 23.0 Practice quality assurance and safety.
- 24.0 Describe the role of a medical assistant with intravenous therapy in oncology and dialysis.
- 25.0 Describe the cardiovascular system.
- 26.0 Identify legal and ethical responsibilities of an EKG aide.
- 27.0 Perform patient care techniques in the health care facility.
- 28.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 29.0 Demonstrate basic office examination procedures.
- 30.0 Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques.
- 31.0 Demonstrate minor treatments.
- 32.0 Demonstrate knowledge of basic diagnostic medical assisting procedures.
- 33.0 Demonstrate basic radiologic procedures.
- 34.0 Demonstrate knowledge of pharmaceutical principles and administer medications.
- 35.0 Perform CLIA-waived diagnostic clinical laboratory procedures.
- 36.0 Demonstrate knowledge of emergency preparedness and protective practices.
- 37.0 Perform administrative office duties.

- 38.0 Perform administrative and general skills.
- 39.0 Perform clinical and general skills.
- 40.0 Display professional work habits integral to medical assisting.
- 41.0 Demonstrate knowledge regarding health information technology.
- 42.0 Identify the processes of leadership by influencing human behavior to accomplish predetermined goals.

Florida Department of Education  
Student Performance Standards

**Program Title:** Medical Assisting Advanced  
**CIP Number:** 1351080103  
**Program Length:** 65 credit hours  
**SOC Code(s):** 31-9092, 31-9099, 43-4171, 31-9097

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:</b>	
12.0	Demonstrate proper use of medical terminology. – The student will be able to:
12.01	Use medical terminology as appropriate for a medical assistant.
12.02	Identify medical terms labeling the word parts.
12.03	Define medical terms and abbreviations related to all body systems.
13.0	Demonstrate knowledge of legal and ethical responsibilities for medical assistants. – The student will be able to:
13.01	Describe the role of the medical assistant.
13.02	Understand the importance of order entry as it relates to certification of the medical assistant.
13.03	Provide health care as set forth in Florida Statute 458.3485 for the medical assistant.
13.04	Distinguish between the liability of the physicians and staff members in the medical office.
13.05	Explain the principles for preventing medical liability.
13.06	List the principles in the Codes of Ethics for Medical Assistants as stated by the American Association of Medical Assistants.
14.0	Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states. – The student will be able to:

14.01	Define the terms Anatomy and Physiology.
14.02	Define both medical terms and abbreviations related to all body systems.
14.03	Define the principle directional terms, planes, quadrants and cavities used in describing the body and the association of body parts to one another.
14.04	Define the levels of organization of the body inclusive of, but not limited to, cells, organs and body systems.
14.05	Describe the function of the 11 major organ systems of the body (1) Integumentary, (2) skeletal, (3) muscular, (4) nervous, (5) endocrine, (6) circulatory (cardiovascular) (7) lymphatic, (8) respiratory, (9) digestive, (10) urinary, and (11) reproductive.
14.06	Describe symptoms and common disease pathology related to each body system and the relationship of the disease process to other body systems.
14.07	Discuss diagnostic options to identify common disease pathology and corresponding basic treatment.
14.08	Compare structure and function of the body across the life span.
15.0	Demonstrate basic clerical/medical office duties. – The student will be able to:
15.01	Perform effective communication skills essential to the medical office.
15.02	Maintain filing systems.
15.03	Operate office equipment and perform clerical office procedures.
15.04	Discuss principles of using electronic health record (EHR).
15.05	Prepare and maintain medical records both manually and within the electronic health record (EHR).
15.06	Screen and process mail.
15.07	Schedule routine appointments and patient admissions and/or procedures both manually and within the electronic health record (EHR).
15.08	Adhere to current government regulations, risk management and compliance within the scope of practice of a medical assistant practicing in the State of Florida.
15.09	Maintain office inventory.
15.10	Inform patients of office policies both verbally and written.
15.11	Perform general housekeeping duties.
15.12	Perform daily office activities both manually and within the electronic health record (EHR).
15.13	Receive patients and visitors.
15.14	Identify and maintain office security policies/procedures.



16.0	Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy. – The student will be able to:
16.01	Demonstrate the appropriate professional behavior of a phlebotomist.
16.02	Explain to the patient the procedure to be used in specimen collection.
16.03	Explain in detail the importance of identifying patients correctly when drawing blood.
16.04	Describe the scope of practice for a phlebotomist.
16.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
16.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
17.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
17.01	List, classify and discuss various departments and services within the health care setting with which the phlebotomist must interact to obtain laboratory specimens from patients.
17.02	Identify the major departments/sections within the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
17.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
18.0	Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist. – The student will be able to:
18.01	Describe and define major body systems with emphasis on the circulatory system.
18.02	List and describe the main superficial veins used in performing venipuncture.
18.03	Locate the most appropriate site(s) for both capillary and venipuncture.
18.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes, and plasma.
18.05	Compare and contrast between serum and plasma as it relates to blood collection.
18.06	Discuss hemostasis as it relates to blood collection.
19.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
19.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
19.02	Explain the special precautions and types of equipment needed to collect blood from a pediatric patient.
19.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.

19.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
19.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
19.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
19.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
20.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
20.01	Follow approved procedure for completing a laboratory requisition form.
20.02	Recognize a properly completed requisition.
20.03	Demonstrate knowledge of established protocol for patient and specimen identification.
20.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
20.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
20.06	Perform venipuncture by evacuated tube, butterfly, and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment, and specimens, and appropriate patient care.
20.07	Describe the correct order of draw.
20.08	Describe the use of barcoding systems used for specimen collection.
20.09	Perform a capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
20.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
20.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
20.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
20.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
20.14	Demonstrate the proper procedure for collecting blood cultures.
20.15	Discuss the effects of hemolysis and methods of prevention.
20.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
21.0	Practice infection control following standard precautions. – The student will be able to:
21.01	Define the term hospital acquired infection.

21.02	Describe and practice procedures for infection prevention including hand washing skills.
21.03	Discuss transmission based precautions.
21.04	Identify potential routes of infection and their complications.
22.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
22.01	Demonstrate good laboratory practice for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
22.02	Demonstrate knowledge of accessioning procedures.
22.03	Describe the significance of time constraints for specimen collection and delivery.
22.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
22.05	Follow protocol for accepting verbal test orders and explain procedure for obtaining signature or other form of authentication of verbal orders.
23.0	Practice quality assurance and safety. – The student will be able to:
23.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
23.02	Practice appropriate patient safety.
23.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
23.04	Follow documentation procedures for work related accidents.
23.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.
24.0	Describe the role of a medical assistant with intravenous therapy in oncology and dialysis. – The student will be able to:
24.01	Outline the principles of intravenous therapy.
24.02	Understand intravenous terminology, practices, and equipment.
24.03	Describe the dangers of intravenous treatment.
24.04	Describe the role of the medical assistant in assisting with intravenous therapy.
25.0	Describe the cardiovascular system. – The student will be able to:
25.01	Locate the heart and surrounding structures.
25.02	Diagram and label the parts of the heart and list the functions of each labeled part.

25.03	Trace the flow of blood through the cardiopulmonary system.
26.0	Identify legal and ethical responsibilities of an EKG aide. – The student will be able to:
26.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
26.02	Maintain a safe and efficient work environment.
26.03	Maintain EKG equipment so it will be safe and accurate.
27.0	Perform patient care techniques in the health care facility. – The student will be able to:
27.01	Describe the physical preparation of the patient for EKG testing.
27.02	Identify patient and verify the requisition order.
27.03	Prepare patient for EKG testing.
27.04	State precautions required when performing an EKG.
28.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. – The student will be able to:
28.01	Calibrate and maintain EKG equipment in the work environment.
28.02	Identify three types of lead systems (standard/limb, augmented, and precordial/chest).
28.03	State Einthoven's triangle.
28.04	Demonstrate proper lead placement including lead placement for patients with special needs
28.05	Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.
28.06	Identify artifacts and mechanical problems.
28.07	Perform a 12 lead EKG.
28.08	Perform a rhythm strip.
28.09	Recognize normal sinus rhythm.
28.10	Report dysrhythmias that are not normal sinus rhythm.
28.11	Recognize a cardiac emergency as seen on the EKG.
28.12	Use documentation skills to identify electrocardiographs.

29.0	Demonstrate basic office examination procedures. – The student will be able to:
29.01	Prepare patients for and assist the physician with physical examinations including, but not limited to, pre and post-natal, male and female reproductive, rectal, and pediatric.
29.02	Measure and record vital signs, recognizing abnormalities and danger signs.
29.03	Measure and record a pulse pressure.
29.04	Measure and record an apical pulse.
29.05	Measure and record an orthostatic blood pressure.
29.06	Record patient data.
29.07	Instruct patient on breast and testicular self-examinations.
29.08	Assist with pediatric procedures, including, but not limited to, weighing, measuring, and collecting specimens.
29.09	Instruct patients regarding health care and wellness practices including but not limited to dietary guidelines necessary for common diseases.
29.10	Create a patient teaching plan which addresses dietary guidelines and special needs.
29.11	Explore and utilize the U.S. Department of Agriculture's "My Plate" Food Guide.
29.12	Prepare patients for diagnostic procedures.
30.0	Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques. – The student will be able to:
30.01	Demonstrate competence in sanitation, disinfection and sterilization.
30.02	Identify common instruments.
30.03	Sterilize and maintain instruments and supplies.
30.04	Sanitize instruments.
30.05	Wrap articles for autoclave.
30.06	Sterilize articles in autoclave.
30.07	Chemically disinfect articles.
30.08	Practice infection control and contamination prevention.
30.09	Safely handle contaminated equipment and supplies.

30.10	Create and maintain sterile fields for dressings and minor surgery.
30.11	Prepare for minor surgical procedures including surgical hand wash and applying sterile gloves.
30.12	Remove sutures and staples.
30.13	Correctly dispose of contaminated materials.
31.0	Demonstrate minor treatments. – The student will be able to:
31.01	Perform minor treatments as directed by the physician including hot and cold therapy, (which includes, but is not limited to the following: hot water bag, heating pad, hot soaks and compresses, ice bag, cold compresses and packs).
31.02	Assist the physician with examination, treatment, and/or minor surgery.
31.03	Organize examination and treatment areas before, during, and after patient care.
31.04	Perform orthopedic procedures, including but not limited to the following: crutch measurements and instruction in use of canes, crutches, walkers, and wheelchairs.
31.05	Demonstrate the knowledge of casting procedures and supplies.
31.06	Apply all types of roller bandages using turns as appropriate.
31.07	Perform eye irrigations and instillations.
31.08	Perform ear irrigations and instillations.
32.0	Demonstrate knowledge of basic diagnostic medical assisting procedures. – The student will be able to:
32.01	Perform visual and auditory screening.
32.02	Perform spirometry.
32.03	Perform oximetry.
32.04	Assist in the performance of a pap and pelvic exam.
33.0	Demonstrate basic radiologic procedures. – The student will be able to:
33.01	Describe the basic operation of radiologic equipment and accessories.
33.02	Describe how to maintain x-ray film files.
33.03	Describe computed and digital radiography systems.
33.04	Educate patients in preparation for radiological exams.

33.05	Demonstrate knowledge of ultrasound treatment.
34.0	Demonstrate knowledge of pharmaceutical principles and administer medications. – The student will be able to:
34.01	Identify commonly administered drugs, their uses and effects.
34.02	Identify the major classifications of medications for each body system including, indications for use, side effects, and adverse reactions.
34.03	Use correct pharmaceutical abbreviations and terminology.
34.04	Identify various methods and routes of drug administration.
34.05	Instruct patients regarding self-administration of medications.
34.06	Calculate dosage and administer pharmaceuticals to correct anatomical sites, to correct patient, by correct route of administration, at the correct time and document correctly.
34.07	Demonstrate knowledge of the legal and ethical standards related to the administration and the dispensing of drugs in the office setting under the doctor's supervision.
34.08	Demonstrate knowledge of emergency medications for first aid.
34.09	Identify the dangers and complications associated with drug administration
34.10	Recognize and report medication errors.
34.11	Demonstrate appropriate techniques to:
34.11.01	Prepare and administer non-parenteral medications (solid, liquids, and inhalers).
34.11.02	Prepare and administer parenteral medications.
34.11.03	Reconstitute powdered drugs.
34.11.04	Prepare injections from ampules and vials.
34.11.05	Apply the Seven Rights of Drug Administration
35.0	Perform CLIA-waived diagnostic clinical laboratory procedures. -- The students will be able to:
35.01	Comply with safety signs, symbols, and labels.
35.02	Recognize signs and symptoms that may indicate to the physician a need for laboratory testing.
35.03	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as “CLIA waived” and the regulatory constraints on test performance.
35.04	Explain the methods of quality control for CLIA-waived testing, identify acceptable and unacceptable control results, and describe specific corrective action required when results are unacceptable.
35.05	Demonstrate proper technique for the collection of urine, capillary whole blood (finger/heel stick), culture material (throat/nasal swab) and other specimen types required for CLIA-waived tests.

35.06	Instruct patients in the proper collection of urine (clean catch, mid-stream), sputum, and stool specimens.
35.07	Perform CLIA-waived occult blood tests.
35.08	Perform CLIA-waived urinalysis testing including color and turbidity assessment and reagent test strips.
35.09	Perform CLIA-waived hematology tests (e.g. - hemoglobin, hematocrit).
35.10	Perform CLIA-waived chemistry tests (e.g. - glucose, cholesterol)
35.11	Perform CLIA-waived pregnancy tests.
35.12	Perform CLIA-waived infectious disease testing (e.g. – strep screen, mono test, influenza A/B).
36.0	Demonstrate knowledge of emergency preparedness and protective practices. -- The student will be able to:
36.01	Maintain and operate emergency equipment and supplies.
36.02	Participate in a mock environmental exposure event and document steps taken.
36.03	Explain an evacuation plan for a physician's office.
36.04	Maintain a current list of community resources for emergency preparedness.
37.0	Perform administrative office duties. – The student will be able to:
37.01	Execute data management using Electronic Health Record (EHR) including, but not limited to, patient registration, appointment scheduling, charting, billing and insurance processing, procedure and diagnostic coding, ordering and monitoring patient testing, medication and prescription orders, keyboarding and correspondence, and performing an office inventory.
37.02	Execute non EHR data management including, but not limited to, selecting appropriate procedure and diagnostic codes, process insurance data and claims, develop and maintain billing and collection systems.
37.03	Perform various financial procedures, including, but not limited to, billing and collection procedures, payroll procedures, and checkbook procedures.
37.04	Demonstrate knowledge of management in a medical office including but not limited to personnel records, interviewing, various management styles, risk management, and conflict resolution.
38.0	Perform administrative and general skills. – The student will be able to:
38.01	Understand proper and professional telephone technique.
38.02	Recognize and respond to verbal communication.
38.03	Recognize and respond to non-verbal communication.
38.04	Maintain confidentiality and adhere to HIPAA regulations.



38.05	Understand how to document manually and electronically appropriately.
38.06	Understand how to schedule appointments manually and electronically accurately.
38.07	Understand how to schedule inpatient and/or outpatient procedures accurately.
38.08	Greet patients courteously and professionally.
38.09	Demonstrate safety and quality assurance in the workplace.
39.0	Perform clinical and general skills. – the student will be able to:
39.01	Demonstrate aseptic hand washing technique.
39.02	Dispose of bio-hazardous waste in appropriate containers.
39.03	Adhere to sterilization techniques according to standards.
39.04	Practice standard precautions.
39.05	Stage patients and obtain vital signs.
39.06	Obtain patient histories.
39.07	Prepare and maintain examination and treatment area(s).
39.08	Prepare patient for examinations and/or minor office procedures.
39.09	Assist with examinations and/or minor office procedures.
39.10	Provide and document patient education.
39.11	Accurately record and report laboratory tests.
40.0	Display professional work habits integral to medical assisting. – The student will be able to:
40.01	Communicate appropriately in healthcare settings by listening, writing, speaking, and presenting with professional demeanor.
40.02	Collaborate, communicate and interact professionally with other healthcare professionals utilizing technology.
40.03	Contribute to team efforts by fulfilling responsibilities and valuing diversity.
40.04	Exercise proper judgment and critical thinking skills in decision making.
40.05	Adapt to changing organizational environments with flexibility.

40.06	Report as expected, on time, appropriately dressed and groomed and ready to work.
40.07	Model acceptable work habits as defined by company policy.
40.08	Complete and follow through on tasks using time management skills and take initiative as warranted.
40.09	Respond appropriately and quickly to patient's needs and concerns.
40.10	Practice etiquette and social sensitivity in face to face interaction, on the telephone and the internet.
40.11	Actively adhere to policies and procedures that protect the patient's confidentiality and privacy.
40.12	Understand resources related to patients' healthcare needs.
<b>In addition, Standards 41-42 must be completed to receive the Medical Assisting Advanced A.S. Degree.</b>	
41.0	Demonstrate knowledge regarding health information technology. – The student will be able to:
41.01	Explain the health care delivery fundamentals and settings in the United States.
41.02	Summarize the history of health information management (HIM) and organizations.
41.03	Interpret the legal aspects of health information management (HIM).
41.04	Explain the fundamentals of information systems.
41.05	Summarize the types of patient records including the documentation issues associated with each.
41.06	Explain patient record numbering, filing systems, storage, and circulation methods.
41.07	Summarize the evolution of the electronic health record (EHR) and its functional benefits.
41.08	Explain additional health information systems used in the hospital setting.
41.09	Summarize the requirements of healthcare coding and reimbursement.
41.10	Explain the different concepts of healthcare transactions and billing.
41.11	Explain the use of indexes, registries, and health data collection.
41.12	Summarize the different management and decision support systems used in healthcare.
41.13	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
41.14	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.

41.15	Apply policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
41.16	Identify HIPAA compliance guidelines and regulations for electronic health information.
42.0	Identify the processes of leadership by influencing human behavior to accomplish predetermined goals. -- The student will be able to:
42.01	Formulate a philosophy for leadership.
42.02	Explain methods that leaders can use in initiating or adjusting to change.
42.03	Evaluate the role of a leader in conflict management.
42.04	Develop a plan for setting effective goals.
42.05	Integrate different genres in development of a leadership philosophy.
42.06	Model an effective team.
42.07	Explore the complexities inherent in an ethical and effective leader.
42.08	Communicate effectively with all members of the health care team when delegating responsibility and monitoring progress.
42.09	Coordinate the decision making process with the client, significant support person(s), and other members of the health care team.
42.10	Describe how a leader utilizes research for evidence-based practice effecting positive client outcomes.
42.11	Employ effective conflict resolution strategies that promote a healthy work environment.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Although it is not required, it is strongly recommended that the programs meet the Standards and Guidelines of an Accredited Educational Program for the Medical Assistant adopted by the American Association of Medical Assistants and the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or the American Medical Technologist and the Accrediting Bureau of Health Education Schools (ABHES).

For further information contact:

#### **Commission on Accreditation of Allied Health Education Programs (CAAHEP)**

1361 Park Street  
Clearwater, FL 33756  
Phone: 727-210-2350  
Fax: 727-210-2354

Accrediting Bureau of Health Education Schools (ABHES)  
777 Leesburg Pike, Suite 312  
N. Falls, VA 22043  
(703) 917-9503

This Program Will Also Be In Accordance With Florida Statute for Medical Assistants, 458.3485 F.S.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Program completers of a CAAHEP or ABHES accredited program are eligible to take the American Association of Medical Assistants' Certification Examination (CMA) or the American Medical Technologists' Certification Examination (RMA). For further information contact:

American Association of Medical Assistants (AAMA)  
20 North Wacker Drive, Suite 1575  
Chicago, Illinois 60606 (312/899-1500)

Or

American Medical Technologist (AMT)  
10700 West Higgins Road, Suite 150  
Rosemont, Illinois 60018 (800 275-1268)

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Medical Assisting Specialist (0351080104) – 44 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Occupational Therapy Assistant  
**Career Cluster:** Health Science

**AS**

CIP Number	1351080303
Program Type	College Credit
Standard Length	74 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-2011 Occupational Therapy Assistants

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as occupational therapy assistants SOC Code 31-2011 (Occupational Therapist Assistants), or to provide supplemental training for persons previously or currently employed in this occupation. The program has been developed to prepare graduates as entry-level generalists and to offer a broad exposure to delivery model systems through academic and fieldwork education including preparation to assist an occupational therapist in implementing the plan of therapy for a patient prescribed by a physician.

The content includes but is not limited to communication and interpersonal skills, health-illness-health concepts, specific life tasks and skills, the study and application of occupational therapy principles, cultural competencies, professional behaviors, and employability skills, health and safety including CPR, anatomy and physiology, kinesiology, psychology, sociology, and gerontology.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 74 credit hours.

## **Regulated Programs**

The program should meet the guidelines of the Accreditation Council for Occupational Therapy Education (ACOTE), 4720 Montgomery Lane Suite 200, Bethesda, MD 20814-3449, (301) 352-2682, of the American Occupational Therapy Association so that students who complete the program will be eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT). . Florida requires licensing of graduates by the Florida Department of Health through the Florida Board of Occupational Therapy Practice for persons completing programs approved by the American Occupational Therapy Association. This program must be in accordance with the Florida Department of Health's Occupational Therapy Board, Chapter 468, Part III, F.S. and Rule Chapter 64B11, F.A.C.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate ability to communicate and use interpersonal skills effectively for the occupation.
- 13.0 Demonstrate an understanding of and apply health-illness-health concepts.
- 14.0 Analyze and apply learned skills in occupations and activities.
- 15.0 Apply occupational therapy assistant role in the OT service delivery process.
- 16.0 Demonstrate knowledge of ethics and safety related to occupational therapy assistants.
- 17.0 Demonstrate knowledge of client mobility.
- 18.0 Demonstrate an understanding of stress/ stressors and stress reactions as well as mediating factors and its influence on health and human functioning.
- 19.0 Explain the role of the OTA in the management of occupational therapy services.
- 20.0 Provide client, family & caregiver education and training.



Florida Department of Education  
Student Performance Standards

**Program Title:** Occupational Therapy Assistant  
**CIP Number:** 1351080303  
**Program Length:** 74 credit hours  
**SOC Code(s):** 31-2011

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Demonstrate ability to communicate and use interpersonal skills effectively for the occupation. – The student will be able to:
12.01	Demonstrate understanding of “therapeutic use of self” in relationship to working with the client and other allied health professionals.
12.02	Develop and conduct didactic and group discussions.
12.03	Record/report observations.
12.04	Demonstrate the ability to participate in group meetings to deliver and receive information and respond to questions from a variety of sources.
12.05	Accurately document the provision of OT services in accordance with third party payer requirements.
12.06	Articulate the importance of statistics, tests and measurements for the purpose of delivering evidence-based practice.
12.07	Effectively interact through written, oral and nonverbal communication with the client, family, significant others and other health providers in a professionally acceptable manner.
13.0	Demonstrate an understanding of and apply health-illness-health concepts. – The student will be able to:
13.01	Explain occupation as a health determinant.
13.02	Describe the basic function of the human body with particular emphasis on the neurological, sensory, musculoskeletal and cardiopulmonary systems.
13.03	Describe the basic development of personality and learning.

13.04	Describe human occupation across the lifespan as related to the developmental process from birth to death.
13.05	Identify and describe disabling conditions commonly referred to occupational therapy.
13.06	Explain the role of occupational therapy as a profession.
13.07	Explain the role of the occupational therapist and occupational therapy assistant in the assessment and intervention process identifying the collaborative roles and rationale for supervision.
13.08	Explain the relationship of occupational therapy to other health care workers.
13.09	Analyze how theory, political climate, history, culture, socioeconomics and demographics influence practice and engagement in activities across the lifespan.
13.10	Demonstrate sound judgment in regard to safety of self and others and adhere to safety regulations throughout the occupational therapy practice.
13.11	Demonstrate the ability to assess and monitor vital sign to ensure that the client is stable for intervention.
14.0	Analyze and apply learned skills in occupations and activities. – The student will be able to:
14.01	Demonstrate skill in analyzing, developing and implementing intervention strategies utilizing occupations and activities.
14.02	Demonstrate skill in instructing and adapting occupations and activities.
14.03	Demonstrate the ability to analyze occupations and activities to implement the intervention plan.
14.04	Grade activities and occupations to promote independent performance.
14.05	Demonstrate proper care and maintenance of equipment and supplies used in occupational therapy.
14.06	Demonstrate an understanding of the use of technology and adaptive equipment to support performance, participation, health and well-being.
14.07	Demonstrate understanding and apply principles of environmental adaptations addressing ergonomics in school, home and work environments.
15.0	Apply occupational therapy assistant role in the OT service delivery process. – The student will be able to:
15.01	Contribute to initial screening to determine need for OT services, including data collection for clients' occupational profiles.
15.02	Contribute to evaluation of occupations, client factors, performance skills, performance patterns, contexts/environments and activity demands, and implement assessments delegated by OT.
15.03	Contribute to development of occupation-based intervention plans and strategies based on client needs and priorities and occupational therapy goals, in collaboration with OT and client.
15.04	Implement occupational therapy interventions selected to promote, establish, restore, maintain, modify, or prevent deterioration in occupational performance.
15.05	Contribute to implementation of occupational therapy intervention for development, remediation and restoration of client factors and performance skills (physical, cognitive, perceptual, neuromuscular, behavioral skills and sensory functions).

15.06	Implement occupational therapy intervention through the use of therapeutic occupations and activities, preparatory methods and tasks, education and training, advocacy, and group interventions.
15.07	Contribute to the ongoing review and modification of occupational therapy interventions, and compare progress toward established outcomes.
15.08	Implement outcome measurements and provide needed client discharge resources.
15.09	Complete documentation along each step of the service delivery process which communicates the need and rationale for occupational therapy services and meets standards for accountability and reimbursement.
15.10	Implement patient safety goals according to appropriate accrediting and regulatory agency guidelines.
16.0	Demonstrate knowledge of ethics and safety related to occupational therapy assistants. – The student will be able to:
16.01	Describe the relationship of the occupational therapy assistant to: <ul style="list-style-type: none"> <li>16.01.01 the physician</li> <li>16.01.02 the occupational therapist</li> <li>16.01.03 the employer</li> <li>16.01.04 other allied health personnel</li> </ul>
16.02	Explain the term "risk management".
16.03	Describe to client current treatment objectives and techniques prior to initiation of treatment or service.
16.04	Describe the principles of ethics as outlined in the AOTA Code of Ethics.
16.05	Adhere to safety regulations throughout the occupational therapy process as appropriate to the setting and scope of practice.
16.06	Explain the process of applying and maintaining a Florida license and national certification.
16.07	Identify requirements to obtain and maintain the Florida license including disqualifying felonies.
16.08	Explain the continuing education requirements necessary to maintain licensure and national certification.
17.0	Demonstrate knowledge of client mobility. – The student will be able to:
17.01	Transfer client safely and correctly using proper body mechanics from any surface to another such as (i.e. bedside commode, wheelchair, toilet, chair or car).
17.02	Identify wheelchair parts and demonstrate proper wheelchair management in various environments.
17.03	Provide information to client as needed.
17.04	Demonstrate the understanding of the use of other assistive devices utilized for mobility of clients, i.e. walker, cane, crutches, gait belt, mechanical lifts.
18.0	Demonstrate an understanding of stress/ stressors and stress reactions as well as mediating factors and its influence on health and human functioning. – The student will be able to:

18.01	Evaluate psychological stressors and their positive and negative effect on physical and mental health.
18.02	Understand the relationship between stress and psychological disorders.
18.03	Understand stress mediators including perception of stressors, predictability and control of stress, physical and psychological effects and coping resources and methods.
18.04	Promote health of the client by utilizing health belief models, self-efficacy and coping strategies.
19.0	Explain the role of the OTA in the management of occupational therapy services. – The student will be able to:
19.01	Perform program administration and support responsibilities.
19.02	Function in the role of supervisee and assist with supervision of aides and volunteers and fieldwork students.
19.03	Describe the impact of federal and state legislation and practice acts on the practice of occupational therapy.
19.04	Demonstrate knowledge of various reimbursement systems and documentation requirements.
19.05	Describe the ongoing professional responsibility for providing fieldwork education and the criteria for becoming a fieldwork educator.
19.06	Demonstrate the ability to participate in the development, marketing and management of service delivery options.
19.07	Cooperate, collaborate and communicate to integrate care and ensure care is continuous and reliable as part of an interdisciplinary team.
19.08	Employ evidenced based practice: integrate research, clinical expertise and patient values for optimal care.
19.09	Participate in learning and research activities.
19.10	Explain the role of the practitioner to advocate for changes in service delivery policies, effect changes in the system, recognize opportunities for emerging practice areas, and advocate for opportunities to expand the Occupational Therapy Assistant's role.
20.0	Provide client, family & caregiver education and training. – The student will be able to:
20.01	Identify resources necessary for clients, family and caregivers for the discharge planning process.
20.02	Educate the client, family and caregivers on the community resources available and their importance.
20.03	Educate the client, family and caregiver on the referral process.
20.04	Provide client, family and caregivers with comprehensive discharge resources.
20.05	Educate client, family and caregivers on home program.
20.06	Provide training in Activities of Daily Living (ADL) in and out of the home utilizing adapted methods and teaching strategies.
20.07	Provide training in Instrumental Activities of Daily Living (I-ADL) in and out of the home utilizing adapted methods and teaching strategies.

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|-------|---|
| 20.08 | Provide training for safe bed positioning and functional transfers in the living environment according to the diagnosis of the client and their limitations.                                |
| 20.09 | Utilize the concept of health literacy while educating clients in order to facilitate skills in areas of occupation as well as prevention, health maintenance, health promotion and safety. |

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training is offered, the following are required for each student: a training plan, signed by the student, teacher, and the employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE must be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

Program Title: Pharmacy Management  
Career Cluster: Health Science

AS	
CIP Number	1351080502
Program Type	College Credit
Standard Length	70 credit hours
CTSO	HOSA: Future Health Professionals; Skills USA
SOC Codes (all applicable)	41-1011 First-Line Supervisors of Retail Sales Workers

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as a Senior/Lead Pharmacy Technician, Pharmacy Technician Coordinator, Pharmacy Manager/Supervisor trainee, drugstore/pharmacy managers, purchasing managers or SOC 41-1011 (First line supervisors/Manager of Retail sales worker), or to provide supplemental training for persons previously or currently employed in these occupations.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

The content includes but is not limited to metric system, medical terminology, medicinal drugs, pharmaceutical compounding, USP 795 standards, sterile techniques, USP 797 and USP 800 standards, maintenance of inventory, IV preparation, receiving and handling of hazardous materials, preparing purchase orders, receiving and checking supplies purchased, printing labels, typing prescription labels, delivering medications, pricing prescription drug orders and supplies, prepackaging unit dose packages, patient record systems, control records, data processing automation in pharmacy, computer application, employability skills, leadership and human relations skills, health and safety, including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document

### **Program Structure**

This program is a planned sequence of instruction consisting of 70 credit hours.

### **Regulated Programs**

**This program is regulated by the Department of Health; Florida Board of Pharmacy.**

This program must be approved by the Florida Board of Pharmacy. Program completers who wish to work as Pharmacy Technicians in the State of Florida must register with the Board of Pharmacy (465.014 F.S.).



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice human relations.
- 13.0 Identify pharmaceutical abbreviations and terminology as related to Community Pharmacy Practice.
- 14.0 Identify medical and legal considerations in various pharmacy settings.
- 15.0 Perform clerical duties as related to pharmacy practice.
- 16.0 Demonstrate knowledge of basic pharmaceutical chemistry and drug classification.
- 17.0 Demonstrate knowledge of inventory management.
- 18.0 Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice.
- 19.0 Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology.
- 20.0 Prepare and deliver medications.
- 21.0 Repackage unit dose medications.
- 22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products.
- 23.0 Recognize consumer economic activities.
- 24.0 Perform decision making activities.
- 25.0 Demonstrate leadership skills.
- 26.0 Identify, classify, and demonstrate management activities.

Florida Department of Education  
Student Performance Standards

**Program Title:** Pharmacy Management  
**CIP Number:** 1351080502  
**Program Length:** 70 credit hours  
**SOC Code(s):** 41-1011

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

**Pharmacy Technician (12-22)**

12.0	Practice human relation skills. - The student will be able to:
12.01	Explore the meaning and duties of a pharmacy technician.
12.02	Explore the organizational flow of responsibilities within a pharmacy setting.
12.03	Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04	Identify pharmacy organizations and their role in the profession to include student membership opportunities.
12.05	Identify the current trends and perspectives in the pharmacy practice.
12.06	Identify how team building can facilitate change within the pharmacy working environment.
12.07	Understand the importance of good interpersonal skills/soft skills in various pharmacy settings.
12.08	Demonstrate ethical conduct in job-related activities.
12.09	Identify State of Florida requirements for obtaining and maintaining pharmacy technician registration as well as continuing education requirements for renewal.
12.10	Explore the importance of national certification and the continuing education requirements for renewal.

13.0	Identify pharmaceutical abbreviations and terminology as related to pharmacy practice. - The student will be able to:
13.01	Utilize pharmaceutical medical terminology.
13.02	Analyze the major symbols and abbreviations used on prescriptions and state the meaning.
13.03	Identify safety strategies used to prevent medication errors due to pharmaceutical abbreviations and terminology.
14.0	Identify medical and legal considerations in various pharmacy settings. - The student will be able to:
14.01	Articulate the significance of current national and Florida law and administrative rules as they relate to the scope of practice for the pharmacy technician.
14.02	Convey an understanding of patient counseling requirements pertaining to OBRA-90 versus MTM (Medication Therapy Management).
14.03	Convey an understanding of medical legal concepts as they relate to the scope of practice for the pharmacy technician.
14.04	Explain the legal requirements for accurate pharmacy documentation and recordkeeping.
14.05	Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.
14.06	Convey an understanding of the patient's Bill of Rights as it relates to pharmacy practice.
14.07	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.
14.09	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials, the utilization of safety data sheets, and hazardous communication symbols.
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.11	Understand and explain the legal requirements for final check by the pharmacist.
14.12	Classify activities that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists.
14.13	Explain the importance of information technology (IT) and its current use in various pharmacy settings.
15.0	Perform clerical duties as related to pharmacy practice. - The student will be able to:
15.01	Demonstrate retail pharmacy dispensing processes.
15.02	Identify potential errors that may result in Quality Related Events.
15.03	Utilize pharmacy software in processing pharmacy prescription data.
15.04	Identify and discuss applications of E-Prescribing and facsimile.

15.05	Utilize and apply interactive communication skills while gathering accurate information from patients and from other healthcare professionals.
15.06	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements.
15.07	Create, complete and maintain patient profiles including third party billing information.
15.08	Understand the processes of third party billing, resolving rejections, and obtaining authorizations.
15.09	Demonstrate professional telephone communication skills within the scope of practice for the pharmacy technician.
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.
15.11	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to various pharmacy practices.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification. - The student will be able to:
16.01	Define the major classifications of pharmaceuticals.
16.02	Categorize at least one official compendia of standards for quality and purity of drugs and authoritative information on dosage, administration, and therapeutic equivalents.
16.03	Utilize pharmacy reference manuals and web sites.
16.04	Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory management. - The student will be able to:
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.
17.02	Maintain controlled substance inventory.
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.
17.05	Create electronic purchase orders.
17.06	Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.
17.08	Convey an understanding of the inventory control process implemented by Title II of the Drug Quality and Security Act.
18.0	Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice. - The student will be able to:

18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.
18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.
18.03	Perform common pharmaceutical calculations.
18.04	Identify common pharmaceutical weighing equipment.
18.05	Identify common pharmaceutical volume measurement equipment.
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.
19.0	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology. - The student will be able to:
19.01	Describe electrolyte balances and imbalances.
19.02	Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.
19.03	Demonstrate an understanding of common adult doses of medications, duration of common drug therapies, and respective contraindications including the BEERS Criteria.
19.04	Identify potential interactions that require a pharmacist's intervention pertaining to food/alcohol, herbal, OTC, and/or prescription medications.
20.0	Prepare and deliver medications. - The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Demonstrate institutional pharmacy dispensing processes.
20.03	Compare all new orders with medications listed on profiles while noting any changes.
20.04	Utilize special precautions in the preparation of medications for pediatric patients.
20.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.06	Understand how to correctly fill and deliver medication cassettes.
20.07	Collect data from medication administration record.
20.08	Demonstrate use of automated medication dispensing equipment.
21.0	Repackage unit dose medications. - The student will be able to:
21.01	Locate correct stock container.

21.02	Operate unit dose packaging equipment.
21.03	Measure, count, and place individual dose in appropriate containers.
21.04	Understand precautions used when packaging unit dose hazardous drugs.
21.05	Record repackaged medication data correctly.
21.06	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to repackaging unit dose medication.
22.0	Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. - The student will be able to:
22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.
22.02	Convey an understanding of United States Pharmacopeia (USP) 800 regulations.
22.03	Compare medication order with label on vial and check expiration date of product.
22.04	Calculate drug dosage for parenteral use.
22.05	Understand common institutional drug names, dosages, and incompatibilities.
22.06	Reconstitute parenteral medications.
22.07	Demonstrate aseptic technique to withdraw medication from stock vial, measure correct quantity as instructed, select and insert it into IV solution without error.
22.08	Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.
22.09	Prepare parenteral solutions using proper aseptic technique.
22.10	Understand the preparation of Total Parenteral Nutrition (TPN) solutions.
22.11	Understand the preparation of chemotherapeutic agents using proper safety techniques.
22.12	Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
22.13	Place label on IV solution container and record appropriately.
22.14	Perform quality control check of completed product.
22.15	Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.
22.16	Convey an understanding of the proper storage and disposal of hazardous drugs.
22.17	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of sterile products.

<b>Pharmacy Management (23-26)</b>	
23.0	Recognize consumer economic activities. – The student will be able to:
23.01	Identify basic concepts of the American economic system.
23.02	Identify basic types and sources of consumer credit.
24.0	Perform decision making activities. – The student will be able to:
24.01	Demonstrate the ability to determine the proper priority of work.
24.02	Prepare a day's schedule for the employer.
24.03	Choose appropriate action in situations requiring application of business ethics.
24.04	Choose appropriate action in situations requiring following a chain of command.
24.05	Choose appropriate action in situations requiring effective time management.
25.0	Demonstrate leadership skills. – The student will be able to:
25.01	Prepare an agenda.
25.02	Demonstrate the ability to conduct an orderly meeting.
25.03	Greet and introduce individuals.
25.04	Demonstrate ability to give clear directions, fair assignments & constructive criticism.
25.05	Demonstrate ability to manage a team.
26.0	Identify, classify, and demonstrate management activities. – The student will be able to:
26.01	Define management.
26.02	Identify various management positions.
26.03	Identify various management styles.
26.04	Identify the major functions of management.
26.05	Classify activities as part of the planning function of management.
26.06	Classify activities as part of the organizing function of management.

26.07	Classify activities as part of the staffing function of management.
26.08	Classify activities as part of the directing function of management.
26.09	Classify activities as part of the controlling function of management.
26.10	Demonstrate the ability to perform planning, organizing, staffing, directing, and controlling activities of management.
26.11	Demonstrate knowledge of the relationship between authority and responsibility to task accomplishment.
26.12	Select the most effective communication systems.
26.13	Identify problems and make appropriate decisions.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical practicum experiences are an integral part of this program.

### Special Notes

The following ATD programs have been approved by the Florida State Board of Education for statewide articulation credit into this degree program

Pharmacy Technician-ATD (0351080507/0351080503) – 40 credit hours

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Certified Pharmacy Technician (PTCBD001) – 9 credits

This program must be approved by the Board of Pharmacy. Program completers who wish to work as Pharmacy Technicians in the State of Florida must register with the Board of Pharmacy (465.014 F.S.).

Due to the clinical experiences students are engaged in through the program and to ensure the safety of both the students and the patients the recommended student to instructor ratio in the classroom is 20:1 and in the lab is 4:1.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

It is recommended that program completers take national pharmacy technician certification exam offered by the Pharmacy Technician Certification Board, 2215 Constitution Ave, Washington, DC 20037-2985, (202) 429-7576. This certification is offered three times annually.

Cooperative training - OJT is appropriate for this program. When cooperative training is offered, the following is required for each student: a training plan, signed by the student, instructor and employer which includes instructional objectives and a list of on-the-job and in-school learning

experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupations which the student has chosen as a career goal. Students must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Physical Therapist Assistant  
**Career Cluster:** Health Science

**AS**

CIP Number	1351080601
Program Type	College Credit
Standard Length	74 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-2021 Physical Therapist Assistants

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as physical therapist assistants SOC Code 31-2021 (Physical Therapist Assistants).

The content includes but is not limited to the requirements of the Commission on Accreditation in Physical Therapy Education/American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, VA 22314, (703) 684-2782.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 74 credit hours.

## **Regulated Programs**

The graduate of this program is prepared to make an application to the Florida Physical Therapist Assistant licensing examination which is given by the Florida Department of Health, Board of Physical Therapy Practice.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Describe anatomical structure, function and dysfunction of the human body related to the practice of physical therapy.
- 13.0 Demonstrate ethical and legal standards of practice as a physical therapist assistant.
- 14.0 Demonstrate the knowledge and skills necessary to provide comprehensive patient/client management and implement a comprehensive plan of care as established by a physical therapist.
- 15.0 Demonstrate competence in implementing selected components of interventions identified in the plan of care established by a physical therapist.
- 16.0 Demonstrate competence in performing components of data collection skills essential for carrying out the plan of care by administering appropriate tests, measures, and outcome (before, during and after interventions).
- 17.0 Participate in the health care environment as a member of a patient/client -centered interprofessional collaborative team.

Florida Department of Education  
Student Performance Standards

**Program Title:** Physical Therapist Assistant  
**CIP Number:** 1351080601  
**Program Length:** 74 credit hours  
**SOC Code(s):** 31-2021

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Describe anatomical structure, function and dysfunction of the human body related to the practice of physical therapy. – The student will be able to:
12.01	Label the following topographic terms:
12.01.01	Medial
12.01.02	lateral
12.01.03	proximal
12.01.04	distal
12.01.05	superior
12.01.06	inferior
12.01.07	anterior
12.01.08	posterior
12.01.09	midline
12.01.10	right and left
12.01.11	bilateral
12.02	Describe the life support chain and recognize the differences between Aerobic and Anaerobic metabolism.
12.03	Identify and describe the anatomical structures and functions as related to physical therapy interventions, their possible adverse effects or complications, and effects of therapy on the other systems of the following:
12.03.01	Circulatory/ Cardiovascular system
12.03.02	Endocrine and metabolic system
12.03.03	Gastrointestinal/Digestive system
12.03.04	Genital and Reproductive system

	12.03.05	Hematologic system
	12.03.06	Hepatic and Biliary system
	12.03.07	Immune System
	12.03.08	Integumentary system
	12.03.09	Lymphatic System
	12.03.10	Musculoskeletal System
	12.03.11	Nervous System
	12.03.12	Respiratory System
	12.03.13	Renal and Urologic systems
	12.04	Demonstrate an understanding of how to apply foundational knowledge of medical / surgical conditions that supports appropriate and effective patient/ client management for rehabilitation across the lifespan.
13.0	Demonstrate ethical and legal standards of practice as a physical therapist assistant. – The student will be able to:	
13.01	Act in a manner that is consistent with the American Physical Therapy Association’s Standards of Ethical Conduct for the Physical Therapist Assistant.	
13.02	Demonstrate an understanding of the laws and regulations governing the profession of physical therapy in Florida Statute and other laws and regulations including but not limited to ADA, IDEA, HIPAA, and Patients’ Bill of Rights.	
13.03	Practice under the direction and supervision of a Physical Therapist (PT).	
13.04	Demonstrate behaviors consistent with the American Physical Therapy Association’s Core Values for the Physical Therapist Assistant.	
13.05	Demonstrate awareness of the patient/client's need for dignity and independence.	
13.06	Recognize and appropriately respond to patient/client expressions of discomfort, spoken or unspoken (body language).	
13.07	Demonstrate sensitivity to the patient/client's emotional response.	
13.08	Recognize own reaction to the patient/client's illness or disability and understand how that may affect treatment outcome.	
13.09	Recognize patient/client's and family's reactions to illness and disability.	
13.10	Demonstrate sensitivity to individual, cultural, religious and socio-economic differences in people.	
13.11	Identify scope of responsibility of the physical therapist assistant as it relates to patient/client care, departmental function, the physical therapist, and the unlicensed personnel and understand the roles of other healthcare providers.	
13.12	Determine tasks and duties that are beyond the scope of practice for the physical therapist assistant.	
13.13	Communicate information effectively to the patient, appropriate caregiver, and healthcare delivery personnel.	
13.14	Utilize equipment and resources efficiently and effectively in the delivery of healthcare.	
13.15	Manage time effectively.	

13.16	Adhere to legal practice standards, including all federal, state, and institutional regulations related to patient/client care and fiscal management.
13.17	Report to appropriate authorities suspected cases of abuse of vulnerable populations.
13.18	Report to appropriate authorities suspected cases of fraud and abuse related to payment for physical therapy and other health care services.
13.19	Implement, in response to an ethical situation, a plan of action that demonstrates sound moral reasoning congruent with core professional ethics and values.
13.20	Apply current knowledge, theory, and clinical judgment while considering the patient/client perspective and the environment, based on the plan of care established by the physical therapist.
13.21	Identify basic concepts in professional literature including, but not limited to, validity, reliability and level of statistical significance.
13.22	Identify and integrate appropriate evidence based resources to support clinical decision making for progress of the patient/client within the plan of care established by the physical therapist.
13.23	Participate in professional and community organizations that provide opportunities for volunteerism, advocacy and leadership.
13.24	Identify career development and lifelong learning opportunities, including the role of the physical therapist assistant in the clinical education of physical therapist assistant students.
14.0	Demonstrate the knowledge and skills necessary to provide comprehensive patient/client management and implement a comprehensive plan of care as established by a physical therapist. – The student will be able to:
14.01	Contribute to the discharge planning related to the plan of care.
14.02	Review patient/client medical record and plan of care and identify pertinent information related to the patient/clients' diagnosis.
14.03	Collaborate with patient/clients, caregivers, other appropriate healthcare personnel, and family to obtain current information and report relevant information to the supervising PT.
14.04	Identify indications, precautions, and contradictions for each treatment/procedure and apply appropriate interventions.
14.05	Report any changes in patient/client status or progress to the supervising physical therapist and other appropriate healthcare personnel.
14.06	Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes.
14.07	Determine a baseline physiological state.
14.08	Recognize changes in a baseline physiological state.
14.09	Determine significance of change in physiological state.
14.10	Use the International Classification of Functioning, Disability and Health (ICF) to describe a patient's/client's impairments, activity and participation limitations.
14.11	Monitor and adjust interventions in the plan of care in response to patient/client status and clinical indications and report relevant information to the supervising Physical Therapist.

15.0	Demonstrate competence in implementing selected components of interventions identified in the plan of care established by a physical therapist. – The student will be able to:
15.01	Administer activities of daily living and functional training to patients/clients.
15.02	Perform gait training and postural training techniques.
15.03	Perform acceptable portions of manual therapy treatments.
15.04	Perform balance and coordination activities.
15.05	Perform developmental activities.
15.06	Appropriately implement therapeutic exercise programs.
15.07	Apply external bandages, dressings and support devices.
15.08	Perform acceptable portions of wound management.
15.09	Measure and properly fit assistive devices.
15.10	Perform gait training/locomotion training in household and community environments with appropriate assistive device(s) or wheelchair.
15.11	Describe the therapeutic benefits of exercise.
15.12	Define orthotics and prosthetic devices and state the importance of proper fit and checking skin integrity.
15.13	Describe upper and lower extremity prosthetics in terms of types of amputations.
15.14	Identify common problems in orthotic and prosthetic management and apply decision making skills in dealing effectively with them.
15.15	Instruct patient, client or care giver in orthotic and prosthetic management and assist patient/client in problem solving techniques.
15.16	Perform airway clearance techniques and instruct patient/client in proper coughing and breathing exercises.
15.17	Describe action required to remediate barriers based on the plan of care established by the Physical Therapist.
15.18	Effectively educate others using teaching methods that are commensurate with the needs of the patient/client, caregiver or healthcare personnel.
15.19	Demonstrate appropriate use of medical terminology and layman's terms.
15.20	Define and describe the importance of the following terms:
15.20.01	disinfect
15.20.02	sterilize
15.20.03	germicide
15.20.04	vaccinate



	15.20.05	immunize
	15.20.06	antiseptic
	15.20.07	septic
15.21	Demonstrate appropriate isolation, sterile techniques, and disinfection of equipment.	
15.22	State the therapeutic temperature range for modalities in which temperature is a guideline for application.	
15.23	Identify physiological effects of heat vs. cold applications.	
15.24	Demonstrate appropriate therapeutic use of biophysical agents including biofeedback, electrotherapeutic agents, compression therapies, cryotherapy, hydrotherapy, superficial and deep thermal agents, traction, and light therapies.	
16.0	Demonstrate competence in performing components of data collection skills essential for carrying out the plan of care by administering appropriate tests, measures, and outcome measures (before, during, and after interventions). – The student will be able to:	
16.01	Recognize and describe normal and abnormal motor behavior.	
16.02	Detect and describe normal and abnormal joint movement.	
16.03	Perform appropriate measurement and assessment techniques within the knowledge and limits of practice to assist the supervising Physical Therapist in monitoring and modifying the plan of care.	
16.04	Recognize gait deviations and compensatory strategies.	
16.05	Demonstrate competence in performing components of data collection skills essential for carrying out the plan of care such as standard vital signs, perceived exertion scales, anthropometrical characteristics and mental functions.	
16.06	Perform goniometric measurement.	
16.07	Identify which environmental factors are potential architectural barriers.	
16.08	Determine which architectural barriers will impact a patient/client's functional level including the use of ambulatory/mobility equipment.	
16.09	Document all aspects of treatment using correct format, content and terminology.	
16.10	Appropriately recognize and monitor responses to positional changes and activities (e.g., orthostatic hypotension, response to exercise).	
16.11	Identify the individual's and caregiver's ability to care for the assistive equipment, prosthetics and orthotics; recognize changes in skin condition and safety factors while using devices and equipment.	
16.12	Determine the safety, status, and progression of patients while engaged in gait, locomotion, balance, wheelchair management and mobility.	
16.13	Detect absent or altered sensation; normal and abnormal integumentary changes; activities, positioning, and postures that aggravate or relieve pain or altered sensations, or that can produce associated skin trauma; and recognize viable versus nonviable tissue.	
16.14	Measure muscle strength by manual muscle testing; observe the presence or absence of muscle mass; recognize normal and abnormal muscle length, and changes in muscle tone.	

16.15	Administer standardized questionnaires, graphs, behavioral scales, or visual analog scales for pain; recognize activities, positioning, and postures that aggravate or relieve pain or altered sensations.
16.16	Determine normal and abnormal alignment of trunk and extremities at rest and during activities.
16.17	Detect signs and symptoms of respiratory distress, and activities that aggravate or relieve edema, pain, dyspnea, or other symptoms; describe thoracoabdominal movements and breathing patterns with activity, and cough and sputum characteristics.
16.18	Respond efficiently and effectively to patient/client and environmental emergencies that commonly occur in the clinical setting.
17.0	Participate in the health care environment as a member of a patient/client -centered interprofessional collaborative team. – The student will be able to:
17.01	Prepare patient/clients and treatment areas and ensures equipment is in proper working order.
17.02	Clean and check operation of wheelchairs, assistive devices, treatment tables, electrical equipment, etc.
17.03	Demonstrate how to properly operate patient/client equipment.
17.04	Instruct in safety considerations for equipment and on indications, precautions, and contraindications of a specific physical therapy intervention.
17.05	Implement appropriate patient/client safety considerations related to the plan of care.
17.06	Describe disciplines within the healthcare system and identify the roles of each discipline related to patient/client interventions.
17.07	Describe the categories of healthcare agencies.
17.08	Recognize current issues, problems, and trends affecting the delivery of healthcare.
17.09	Accurately and ethically charge for services provided.
17.10	Participate in performance improvement activities (quality assurance).

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Laboratory work is structured so that students begin with basic patient care skills, progress to basic physical therapy skills and then to more advanced physical therapy application and techniques.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The Health Careers Core must be taken by all students (secondary, postsecondary adult and postsecondary vocational) planning to complete any Health Occupations program. Once successfully completed, the core does not need to be repeated at any instructional level.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

The cooperative method of instruction is not appropriate for this program.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**        **Cardiovascular Technology**  
**Career Cluster:**     **Health Science**

**AS**

CIP Number	1351090100
Program Type	College Credit
Standard Length	77 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2031 Cardiovascular Technologists and Technicians

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as cardiovascular technologists, SOC Code 29-2031 (Cardiovascular Technologists and Technicians).

The content includes but is not limited to instruction in performing examinations leading to diagnosis and treatment of patients with cardiovascular disease. A clinical component is a necessary element to a program. Reinforcement of basic skills in English, mathematics and science occurs through classroom instruction and applied laboratory practice.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 77 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Explore career opportunities in one or more of the following: invasive cardiovascular technology (cardiac catheterization, invasive cardiac electrophysiology and non-invasive adult echocardiography, pediatric echocardiography, non-invasive vascular technology.
- 13.0 Identify the anatomic structure and function of body systems in relation to cardiovascular disease and studies.
- 14.0 Demonstrate the ability to recognize normal and abnormal electrocardiogram (EKG) rhythms and arrhythmias as each apply to intra-procedural therapies.
- 15.0 Practice safety and quality assurance.
- 16.0 Follow professional principles related to the practice of cardiovascular technology.
- 17.0 Use basic medical electronics and medical instrumentation.
- 18.0 Describe the role of the cardiovascular technologist in catastrophic event management.
- 19.0 Discuss the pharmacological aspects of cardiovascular drugs.
- 20.0 Perform patient care, record patient history and practice effective communication.

**One of the following sub-specialties must be added to the intended outcomes for students to complete the Cardiovascular Technology A.S.:**

- 21.0 Assist in all aspects of invasive cardiovascular diagnostic and interventional procedures and techniques with emphasis on cardiovascular catheterization.
- 22.0 Perform noninvasive cardiovascular techniques with an emphasis on echocardiography.
- 23.0 Perform noninvasive peripheral vascular studies.
- 24.0 Perform noninvasive cardiovascular techniques with an emphasis on echocardiography related to the pediatric patient.
- 25.0 Assist in all aspects of cardiovascular electrophysiology procedure.

Florida Department of Education  
Student Performance Standards

**Program Title:** Cardiovascular Technology  
**CIP Number:** 1351090100  
**Program Length:** 77 credit hours  
**SOC Code(s):** 29-2031

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Explore career opportunities in one or more of the following: invasive cardiovascular technology (cardiac catheterization, invasive cardiac electrophysiology and non-invasive adult echocardiography, pediatric echocardiography, non-invasive vascular technology. – The student will be able to:
12.01	Describe the CVT profession, including but not limited to, history, accreditation, education, job conditions, salaries, critical thinking and team building.
12.02	Identify the cardiovascular professional organizations and discuss their roles (SDMS, ASE, SVU, HRS, and ACVP).
12.03	Discuss certification, licensure, and registration for the Cardiovascular Technologist.
12.04	Describe the sub-specialty of Invasive cardiovascular technology (Cardiovascular Catheterization) and identify the duties of the Cardiovascular Invasive Specialist.
12.05	Describe the sub-specialty of and identify the duties of the Cardiovascular Technologist.
12.06	Describe the sub-specialty of adult echocardiography and identify the duties of the Cardiovascular Technologist.
12.07	Describe the sub-specialty of pediatric echocardiography and identify the duties of the Cardiovascular Technologist.
12.08	Describe the sub-specialty of Non-invasive Vascular technologist and identify the duties of the Cardiovascular Technologist.
12.09	Describe the sub-specialty of cardiac electrophysiology and identify the duties of the Cardiovascular Technologist.
13.0	Identify the anatomic structure and function of body systems in relation to cardiovascular disease and studies. – The student will be able to:

13.01	Describe human anatomy and physiology with emphasis on the cardiovascular systems.
13.02	Discuss principles and methods of disease transmission and prevention.
13.03	Identify normal and abnormal data obtained from medical tests.
13.04	Describe basic acquired and congenital pathological conditions of the cardiovascular systems.
14.0	Demonstrate the ability to recognize normal and abnormal electrocardiogram (EKG) rhythms and arrhythmias as each apply to intra-procedural therapies. – The student will be able to:
14.01	Identify cardiac anatomy and the normal and abnormal electrical conduction pathways within the heart.
14.02	Identify the inherent rates of each segment of the nodal pathway of the heart.
14.03	Identify the components of a normal cardiac cycle including the hemodynamic, mechanical and electrical components.
14.04	Associate the action potential and each electrical segment of the EKG cycle (P wave, PR interval, QRS complex, ST segment, T wave, isoelectric line) to the mechanical function of the heart.
14.05	Explain how the PR interval and QRS complex are measured within the cardiac cycle.
14.06	Identify sinus, atrial, junctional, supraventricular, and ventricular rhythms as well as heart blocks and paced rhythms.
14.07	Correlate the clinical implications of arrhythmias to cardiac pathology.
14.08	Differentiate artifact, interference, and noise versus arrhythmia.
14.09	Identify the components of a 12-Lead EKG including appearance of infarct, ischemia and chamber enlargement.
15.0	Practice safety and quality assurance. – The student will be able to:
15.01	Apply acceptable safety practices in cardiovascular instrumentation per employer and OSHA standards.
15.02	Demonstrate knowledge of radiation safety procedures.
15.03	Demonstrate the practice of radiation safety procedures.
15.04	Demonstrate knowledge of quality assurance as it relates to imaging equipment.
15.05	Implement appropriate regulatory, institutional and department specific accreditation patient safety guidelines.
15.06	Apply the knowledge of blood and air borne pathogens and the psychomotor skills to employ Standard precautions and safe practices to reduce occupational exposure.
16.0	Follow professional principles related to the practice of cardiovascular technology. – The student will be able to:
16.01	Carry out all responsibilities in the best interest of the patient in an excellent manner.



16.02	Carry out assigned tasks conscientiously, honestly, enthusiastically, and accept responsibility for the task and the results.
16.03	Function effectively as part of a team-adaptable to change and willing to teach others.
16.04	Abide by the rules and procedures of the work site.
16.05	Maintain a hygienic, professional appearance.
16.06	Demonstrate pride and loyalty to the profession.
17.0	Use basic medical electronics and medical instrumentation. – The student will be able to:
17.01	Identify the duties related to electronic monitoring and diagnostic testing of patient.
17.02	Demonstrate computer literacy skills as applied to cardiovascular practice.
17.03	Operate equipment used in diagnostic testing, physiological monitoring and interventional procedures for cardiovascular patients.
17.04	Set up, calibrate, and operate selected equipment in the cardiovascular laboratory.
18.0	Describe the role of the cardiovascular technologist in catastrophic event management. – The student will be able to:
18.01	Follow institutional catastrophic event protocol.
18.02	Respond to simulated emergency care situations encountered in a cardiovascular department.
18.03	Identify the components of the defibrillator and how it is used.
18.04	Cite the indications for cardiac defibrillation and cardioversion.
19.0	Discuss the pharmacological aspects of cardiovascular drugs. – The student will be able to:
19.01	State the mechanism of action of selected cardiovascular drugs.
19.02	Identify and describe uses of pharmacological agents on an emergency "crash" cart.
19.03	Use needles and syringes in preparing medications for administration in simulated practice.
20.0	Perform patient care, record patient history and practice effective communication. – The student will be able to:
20.01	Perform patient identification and time-out procedures.
20.02	Examine the patients chart and/or electronic medical record in order to locate pertinent information, when allowable.
20.03	Perform a patient history pertinent to the cardiovascular exam.

20.04	Practice patient care with emphasis on patient privacy, patient confidentiality, informed consent, body mechanics, patient positions and patient transportation.
20.05	Measure vital signs and differentiate between normal and abnormal values.
20.06	Cite the indications for and name the methods of oxygen administration.
20.07	Recognize human behaviors indicative of anxiety.
20.08	Identify and develop effective communication and interpersonal relations skills with patients, family, and colleagues.
20.09	Discuss approaches used in dealing with a variety of hospitalized persons.
20.10	Describe socio-cultural traits which may affect a person's hospital care.
<b>One of the following sub-specialties must be added to the intended outcomes for cardiovascular. Additional sub-specialties may be included, as desired.</b>	
<b>*For those programs which include the invasive cardiovascular sub-specialty, the following student performance standards are necessary.</b>	
21.0	Assist in all aspects of invasive cardiovascular diagnostic and interventional procedures and techniques with emphasis on cardiovascular catheterization. – The student will be able to:
21.01	Describe the history of invasive cardiovascular procedures, including pioneers in the field.
21.02	Practice sterile technique as it applies to the cardiovascular catheterization set up and protocols for cardiovascular catheterization procedures.
21.03	Demonstrate the knowledge diagnostic left heart, right heart and vascular catheterization set up, protocols and procedures.
21.04	Apply communication skills and procedure knowledge in patient education pre, during and post procedure.
21.05	Perform diagnostic left heart, right heart and vascular catheterization set up, protocols, and procedures.
21.06	Demonstrate the knowledge of diagnostic procedures in the cardiovascular Cath lab including, but not limited to, angiography, IVUS (intravascular ultrasound), biopsy, FFR (fractional flow reserve), optical coherence tomography (OCT), and electrophysiology studies.
21.07	Demonstrate the knowledge of interventional procedures in the cardiovascular Cath lab including, but not limited to, angioplasty, stent implantation, thrombectomy, IABP (intraaortic balloon pumping), valvuloplasty, pericardiocentesis, atherectomy, closure devices, vena cava filters, LVADs, and structural heart procedures.
21.08	Describe catheter insertion techniques and assist physician with manipulation of catheterization equipment and instruments during the procedures.
21.09	Recognize cardiovascular anatomy through angiography and assess cardiovascular status from the data.
21.10	Recognize and interpret cardiovascular hemodynamic parameters and record and measure left and right heart and vascular pressures.

21.11	Determine cardiac output and cardiac index by Fick equation, thermodilution technique and angiographic technique and perform Hemodynamic calculations.
21.12	Perform calculations which include, but are not limited to, mean arterial pressure, ejection fraction regurgitation fraction, valve area using Gorlin formula and pulmonary and systemic vascular resistances.
21.13	Recognize presence of shunts by oximetry and perform shunt calculations.
21.14	Discuss permanent and temporary pacemaker protocols.
21.15	Correlate and calculate necessary data from right and left heart and vascular catheterization and assess the cardiovascular status from this information.
21.16	Demonstrate acceptable post-Cath care of the patient and catheterization access site(s).
21.17	Identify complications which occur during cardiovascular catheterization procedures and describe treatment options.
21.18	Describe and perform venipuncture to initiate intravenous fluid therapy on a venipuncture model, where applicable. (Optional)
21.19	Maintain and troubleshoot existing intravenous/intra-arterial lines, where applicable. (Optional)
21.20	Demonstrate knowledge of basic x-ray history, theory, production, radiation biology and protection.
21.21	Demonstrate knowledge of patient assessment and practice patient care of the invasive Cardiovascular patient, including but not limited to basic assessment, history and physical, vital signs, lab values, CNS assessment, CVS assessment, peripheral vascular assessment etc.
21.22	Demonstrate the knowledge associated with cardiovascular catheterization procedures, including but not limited to Pre and post-cardiovascular catheterization patient care, monitoring and recording, manipulation of imaging equipment, image acquisition quality control, scrubbing, and circulating.
21.23	Perform the psychomotor clinical skills associated with cardiovascular catheterization procedures, including but not limited to Pre and post-cardiovascular catheterization patient care, monitoring and recording, manipulation of imaging equipment, image acquisition quality control, scrubbing, and circulating.
21.24	Demonstrate knowledge of the pharmacologic principles and medications required to function in the cardiovascular Cath labs including pharmacology calculations and IV fluid therapy.
21.25	Administer medications during cardiovascular catheterization procedures under the direction of the physician.
21.26	Demonstrate knowledge and skills of ACLS protocols.
21.27	Demonstrate knowledge of the congenital and acquired cardiovascular diseases and their treatments found in cardiovascular patients.
21.28	Demonstrate knowledge of arterial and venous blood gas and acid-base physiology; identify normal and abnormal blood gas values, interpret blood gas and acid-base data, outline steps in collecting arterial and venous blood samples, where applicable. (Optional)
21.29	Discuss the main components of the blood-clotting cascade, how different pathology and pharmacological agents affect the process, and how manual, mechanical, and invasive arterial closure methods relate to post-op hemostasis.

21.30	Demonstrate knowledge of patient preparation, sterile technique, instrumentation, and basic device function for PPM and ICD procedures.
<b>*For those programs which include the adult echocardiography sub-specialty, these student performance standards are necessary.</b>	
22.0	Perform noninvasive cardiovascular techniques with an emphasis on echocardiography. – The student will be able to:
22.01	Relate normal and abnormal heart sounds to specific cardiac pathology.
22.02	Assist in performance of stress electrocardiography and explain indications, contraindications, and positive and negative test results.
22.03	Assist in performance of ambulatory electrocardiography, explain indications, and test results.
22.04	Describe the physics of ultrasound as it applies to echocardiography and cardiac Doppler.
22.05	Demonstrate function and use of noninvasive cardiology equipment.
22.06	Perform, measure and analyze M-Mode and Two-Dimensional echocardiograms.
22.07	Perform, measure and analyze Color Flow Doppler exams.
22.08	Perform, measure, and analyze interventional spectral Doppler echocardiography.
22.09	Demonstrate knowledge of pathophysiology of cardiovascular diseases as seen on echocardiography.
22.10	Perform and demonstrate knowledge of information derived from echocardiography, including but not limited to measurements, normal parameters and equations.
22.11	Demonstrate knowledge of patient assessment, and practice patient care of the cardiac patient.
22.12	Perform and demonstrate knowledge of non-invasive modalities and advance techniques, including but not limited to stress echo, effects of medication, normal/abnormal findings, holter monitoring, stress testing, transesophageal echocardiogram, 3D echocardiograms, contrast agents and provocation maneuvers.
<b>*For those programs which include the noninvasive vascular technology sub-specialty, the following student performance standards are necessary.</b>	
23.0	Perform noninvasive peripheral vascular studies. -- The student will be able to:
23.01	Discuss the physics of ultrasound as it applies to Sonography imaging and Doppler, including but not limited to definition of sound, propagation of sound in tissue, Transducers and ultrasound imaging (,B, & M mode), artifacts and risks of bioeffects.
23.02	Discuss the physical principles and instrumentation as it applies to tissue perfusion, including but not limited to general physics and laws of hemodynamics, tissue mechanics and pressure transmission, & plethysmography.
23.03	Discuss normal vascular anatomy.
23.04	Interpret normal vascular ultrasonic anatomy.

23.05	Describe patient positioning with respect to vascular modalities.
23.06	Demonstrate knowledge of assessment and care of the cardiovascular patient.
23.07	Discuss circulatory hemodynamics as it applies to arterial, venous and cerebral hemodynamics.
23.08	Perform arterial patient physical assessment.
23.09	Perform venous patient physical assessment.
23.10	Perform cerebrovascular patient physical assessment.
23.11	Perform noninvasive peripheral vascular evaluations, including venous, arterial, visceral and cerebral vascular studies.
23.12	Discuss therapeutic intervention as it relates to arterial, venous, visceral and cerebrovascular studies.
23.13	Describe test validation and measurements as they relate to vascular studies.
23.14	Demonstrate a knowledge of the pathophysiology and etiology of diseases of the circulatory system, including venous, arterial, visceral and cerebrovascular diseases.
23.15	Discuss appropriate action based on data interpretation.
<b>*For those programs which include the pediatric echocardiography sub-specialty, these student performance standards are necessary.</b>	
24.0	Perform noninvasive cardiovascular techniques with an emphasis on echocardiography related to the pediatric patient. – The student will be able to:
24.01	Demonstrate knowledge of indication for echocardiogram and obtain information required for diagnosis and treatment of the pediatric patient.
24.02	Describe the physics of ultrasound as it applies to echocardiography and cardiac Doppler.
24.03	Demonstrate function and safe use of cardiac ultrasound equipment.
24.04	Demonstrate ability to acquire diagnostic images and utilization of proper display orientation.
24.05	Perform, measure and analyze M-Mode and Two-Dimensional echocardiograms.
24.06	Perform, measure, and analyze Color Flow Doppler exams.
24.07	Perform, measure, and analyze spectral Doppler and recognize application for assessment of blood flow and prediction of intracardiac pressures.
24.08	Demonstrate knowledge of cardiac cycles and related hemodynamics.
24.09	Demonstrate knowledge of embryology, congenital heart diseases and acquired heart diseases.

24.10	Demonstrate knowledge of pathophysiology of cardiovascular diseases as seen on echocardiography.
24.11	Demonstrate knowledge of cardiac surgeries, allografts, interventional procedures and sequelae.
24.12	Perform and demonstrate knowledge of information derived from echocardiography, including but not limited to measurements, normal parameters and equations.
24.13	Demonstrate knowledge of limitations of echocardiography and Doppler techniques.
24.14	Demonstrate knowledge of patient assessment, and practice patient care of the pediatric cardiac patient.
24.15	Perform and demonstrate knowledge of advanced techniques, including but not limited to stress echo, effects of medication, normal/abnormal findings, stress testing, transesophageal echocardiogram, intra cardiac echo, 3D echo and contrast agents and provocation maneuvers.
<b>*For those programs which include the invasive cardiac electrophysiology sub-specialty, the following student performance standards are necessary.</b>	
25.0	Assist in all aspects of cardiovascular electrophysiology procedure. – The student will be able to:
25.01	Describe the physiology of and indications for diagnostic and interventional EP procedures including, but not limited to, ventricular stimulation, syncope study, SVT study, single, dual and bi-ventricular internal cardiac device implant, venous angiography, PTVA, radiofrequency ablation, cryo-ablation, external cardioversion, internal cardioversion, pericardiocentesis, lead extraction and laser lead extraction.
25.02	Identify the complications associated with electrophysiology studies and internal cardiac device implants and describe emergency interventions.
25.03	Demonstrate knowledge and skills of ACLS protocols.
25.04	Demonstrate knowledge of and practice pre and post patient care for the patient undergoing diagnostic/interventional electrophysiology study and internal cardiac device implant to include review of history and physical, vital signs, lab values, medications and peripheral vascular assessment.
25.05	Identify diagnostic and interventional catheters, their use, and how they could be configured for EGM acquisition.
25.06	Describe catheter insertion techniques for manipulation of temporary & permanent pacing and interventional catheters.
25.07	Practice sterile technique as it applies to the preparation of self and patients for electrophysiology procedures and internal cardiac device implants.
25.08	Perform patient and sterile table set up for diagnostic and interventional ventricular, syncope and SVT electrophysiology procedures and internal cardiac device implants.
25.09	Perform as a scrub and record technologist assisting physicians with diagnostic and interventional EP procedures including, but not limited to, ventricular stimulation, syncope study, SVT study, single, dual chamber, and bi-ventricular internal cardiac device implant, venous angiography, PTVA, radiofrequency ablation, cryo-ablation, external cardioversion and internal cardioversion.
25.10	Identify and properly utilize surgical instruments while assisting with internal cardiac device implants.
25.11	Identify the ionic properties of the cardiac action potential and the changes to the action potential associated with abnormal

	values.
25.12	Identify the normal refractory periods of the nodes & tissue and describe the effects that antiarrhythmics may have on them.
25.13	Identify intra-cardiac electrograms from the right & left atrium, at the AV node, bundle of His, right & left ventricles and in the coronary sinus.
25.14	Identify and describe the mechanism and perform differential diagnosis of cardiac arrhythmias including, but not limited to, ventricular tachycardia, AV nodal reentrant tachycardia, AV reentrant tachycardia, atrial flutter and atrial fibrillation.
25.15	Perform stimulation protocols and identify pharmacology used for induction, termination, and differential diagnosis of arrhythmias, including but not limited to, ventricular tachycardia's (ischemic, RVOT-VT, idiopathic LV VT & BBRT), AV nodal reentrant tachycardia, AV reentrant tachycardia, atrial flutter and atrial fibrillation.
25.16	Demonstrate knowledge of the pharmacologic principles and medications used for the care of patients in the cardiac electrophysiology lab.
25.17	Demonstrate knowledge of differential diagnosis techniques and treatment of congenital arrhythmias, including but not limited to, Brugada Syndrome, Long QT syndrome, Arrhythmogenic Right Ventricular Dysplasia and Wolf-Parkinson-White.
25.18	Identify the coronary venous system utilizing radiographic and angiographic imaging.
25.19	Identify venous and arterial hemodynamic waveforms while performing trans-septal puncture and respond appropriately to recognized data.
25.20	Perform in the record role, demonstrating knowledge of acquisition and evaluation of data, stimulator operations, and provide differential diagnosis of arrhythmias during electrophysiology and internal cardiac device procedures.
25.21	Demonstrate the ability to perform basic internal cardiac device programmer operations, including interrogation, diagnostic information retrieval, pacing & sensing thresholds, and emergency pacing.
25.22	Analyze diagnostic data and results of functional testing retrieved from pacemakers and internal cardiac devices.
25.23	Demonstrate appropriate post-procedure care for venous/arterial access sites and/or electrophysiology procedures or internal cardiac device implant sites.
25.24	Demonstrate knowledge of basic x-ray history, theory, production, biology, and patient/employee safety.
25.25	Demonstrate critical behaviors and knowledge of quality control while manipulating imaging equipment, and providing image acquisition during diagnostic/interventional electrophysiology procedures and internal cardiac device implants.
25.26	Identify mapping technologies and theories currently used in ablation procedures: To include impedance based, hybrid and electromagnetically derived systems. Mapping theories such as: anatomical, high definition, voltage, isochronal, and CFE.
25.27	Identify the difference between bipolar and unipolar electrograms, including current filtering utilization.
25.28	Demonstrate basic knowledge of ICE (Intracardiac echocardiography) applications currently used during electrophysiology procedures.
25.29	Demonstrate knowledge of procedural focused aspects of the transeptal procedure used in EP labs. Including but limited to: Anatomical locations, equipment currently used, complications, indications, monitoring and scrub duties.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

Basic preparation in English, Mathematics, and the Sciences are recommended prior to entering the Cardiovascular/Cardiopulmonary professional component of the curriculum. The following courses with an (\*) marking those thought to be essential. (Prerequisite courses required to complete the program must be included in the listed program length credits.

- \_ English - Composition\*
- \_ Communications - Speech
- \_ Electronic
- \_ Oral Biology
- \_ Anatomy & Physiology - General\*
- \_ Math - Algebra \*
- \_ Chemistry\*
- \_ Physics\*
- \_ Microbiology
- \_ Psychology - Social Skills
- \_ Computers (health informatics)
- \_ Keyboarding
- \_ Word processing
- \_ Hardware & systems
- \_ Software
- \_ Humanities - as required for graduation

Cardiovascular/cardiopulmonary technology educational programs will address one or more of the five basic sub-specialties: 1) invasive cardiovascular technology, 2) adult echocardiography) pediatric echocardiography, 4) noninvasive vascular study and 5) cardiac electrophysiology. Cardiopulmonary technology should include the additional component of pulmonary function testing. The Cardiovascular/Cardiopulmonary Technology Program may award an Associate of Applied Science (AAS) and/or Associate of Science (AS) degree within the program length guidelines. When the cardiovascular program competencies are offered, the program cannot exceed 77 credit hours.



This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal; therefore, the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

The program should meet the requirements of the American Medical Association and Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756, Phone: 727-210-2350, Fax: 727-210-2354 [www.CAAHEP.org](http://www.CAAHEP.org).

Graduates should be prepared to take the appropriate registry and/or state licensure examinations.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Emergency Medical Services  
**Career Cluster:** Health Science

**AS**

CIP Number	1351090402
Program Type	College Credit
Standard Length	73 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to all those objectives identified in the current U S Department of Transportation, National EMS Education Standards for both the EMT and Paramedic.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 73 credit hours.

## **Regulated Programs**

The recommended instructor-student ratio may not exceed 1:6 pursuant to 401.1201 F.S. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

This program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome (SUIDS) training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. This program also meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

Management practicum shall be provided in an agency which will provide the student with the opportunity to observe and practice the learning objectives.

All students must satisfy the requirements of both the EMT and Paramedic certificates prior to completion of the associate's degree.

The medical procedures performed by a Paramedic must be performed under the direction of a licensed physician with appropriate emergency experience according to Chapter 64J, Florida Administrative Code.

It is strongly recommended this program be accredited by Commission on Accreditation of Allied Health Education Programs (CAAHEP). Beginning January 1, 2013, National Registry for Emergency Medical Technicians (NREMT) will require students applying for Paramedic National certification to be from a CAAHEP/CoAEMSP accredited program.

## Standards

After successfully completing this program, the student will be able to perform the following:

### **EMT: Completion of intended outcomes 01-62 lead to the student's eligibility to sit for the licensure exam for EMT.**

- 01.0 Demonstrate a simple depth, foundational breadth of knowledge of EMS systems.
- 02.0 Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making.
- 03.0 Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication.
- 06.0 Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication.
- 07.0 Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics.
- 08.0 Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS.
- 09.0 Demonstrate a fundamental knowledge in the use of medical terminology.
- 10.0 Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation.
- 11.0 Demonstrate a fundamental knowledge of life span development to patient assessment and management.
- 12.0 Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care.
- 13.0 Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency.
- 14.0 Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT.
- 15.0 Demonstrate a foundational depth, fundamental breadth of knowledge of airway management across the life span within the scope of practice of the EMT.
- 16.0 Demonstrate a fundamental depth, foundational breadth of knowledge of respiration.
- 17.0 Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span.
- 18.0 Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations.
- 19.0 Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations.
- 20.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking.
- 21.0 Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment.
- 22.0 Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 24.0 Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints.
- 25.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span.
- 26.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span.

- 27.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span.
- 28.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span.
- 29.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span.
- 30.0 Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span.
- 31.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span.
- 32.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span.
- 33.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 34.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span.
- 35.0 Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergencies across the life span.
- 36.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span.
- 37.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 38.0 Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span.
- 39.0 Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span.
- 40.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span.
- 41.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span.
- 42.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 43.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 44.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.

- 46.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck, and spine trauma across the life span.
- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of trauma patients with special considerations across the life span.
- 49.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of environmental emergencies across the life span.
- 50.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span.
- 51.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT.
- 52.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT.
- 53.0 Demonstrate a fundamental depth, fundamental breath of knowledge of the management of the pediatric patient within the scope of practice of the EMT.
- 54.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT.
- 55.0 Demonstrate a simple depth, simple breadth of knowledge of management of the patient with special challenges across the life span.
- 56.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 57.0 Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system.
- 58.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 59.0 Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response.
- 60.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

**Paramedic: Completion of intended outcomes 63-125 lead to the student's eligibility to sit for the licensure exam for Paramedic.**

- 63.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems.
- 64.0 Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice.
- 65.0 Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness.
- 66.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing.
- 67.0 Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system.
- 68.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles.

- 69.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS.
- 70.0 Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems.
- 71.0 Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals.
- 72.0 Demonstrate a complex knowledge of pathophysiology of major systems.
- 73.0 Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development.
- 74.0 Demonstrate a fundamental knowledge of the principles of public health.
- 75.0 Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology.
- 76.0 Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic.
- 77.0 Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic.
- 78.0 Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span.
- 79.0 Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span.
- 80.0 Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilator assessment and management across the life span.
- 81.0 Demonstrate a complex depth, comprehensive breadth of knowledge of scene management.
- 82.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations.
- 83.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the components of history taking.
- 84.0 Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span.
- 85.0 Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic.
- 86.0 Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 87.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints.
- 88.0 Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span.
- 89.0 Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span.
- 90.0 Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span.
- 91.0 Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious diseases across the life span.
- 92.0 Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span.
- 93.0 Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span.
- 94.0 Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/ emergencies across the life span.
- 95.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span.
- 96.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.

- 97.0 Demonstrate a complex depth, foundational breadth of knowledge of the assessment and management of hematology disorders/emergencies across the life span.
- 98.0 Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span.
- 99.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span.
- 100.0 Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 101.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose, and throat across the life span.
- 102.0 Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure.
- 103.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span.
- 104.0 Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span.
- 105.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 106.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 107.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 108.0 Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.
- 109.0 Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span.
- 110.0 Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span.
- 111.0 Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span.
- 112.0 Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span.
- 113.0 Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries.
- 114.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic.
- 115.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic.
- 116.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic.
- 117.0 Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic.
- 118.0 Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span.



- 119.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 120.0 Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system.
- 121.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 122.0 Demonstrate a complex depth, comprehensive breadth of knowledge of air Medical transport risks, needs, and advantages.
- 123.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 124.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 125.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

**Management Option: This option (outcomes 126-136) prepares students for administrative and supervisory positions in the Emergency Medical Services field.**

- 126.0 Demonstrate leadership and administrative skills basic to management emergency medical service systems.
- 127.0 Interpret federal, state and local laws as they apply to emergency medical service systems.
- 128.0 Demonstrate knowledge of operational and organizational structures of emergency medical service systems.
- 129.0 Demonstrate knowledge of psychological problems and stressors in emergency medical service employees and find appropriate solutions.
- 130.0 Demonstrate knowledge of materials and supplies used in emergency medical service systems.
- 131.0 Demonstrate knowledge of occupational safety and health.
- 132.0 Demonstrate knowledge of appropriate workloads for each employee.
- 133.0 Review, approve and monitor departmental capital and operational budgets.
- 134.0 Identify and apply legal reimbursement systems.
- 135.0 Comply with accreditation standards of governmental or governmental-appointed agencies and organizations.
- 136.0 Demonstrate computer literacy.

**Education Option: This option (outcomes 137-142) prepares students as trainers and/or instructors in the EMS field.**

- 137.0 Demonstrate knowledge of basic teaching methods, learning and educational psychology.
- 138.0 Describe and discuss curriculum design and development.
- 139.0 Demonstrate appropriate measurement and evaluation skills.
- 140.0 Demonstrate mastery of required technical skills.
- 141.0 Demonstrate classroom management skills.
- 142.0 Demonstrate computer literacy.

Florida Department of Education  
Student Performance Standards

Program Title:       Emergency Medical Services  
CIP Number:         1351090402  
Program Length:     73 credit hours  
SOC Code(s):        29-2041

Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:

**EMT: Completion of intended outcomes 01-63 lead to the student’s eligibility to sit for the licensure exam for EMT.**

01.0	<b>EMS Systems:</b> Demonstrate a simple depth, foundational breadth of knowledge of EMS systems. – The student will be able to:
01.01	Define Emergency Medical Services (EMS) systems.
01.02	Discuss the historical background of the development of the EMS system.
01.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT and PM) as well as the three levels (EMR, EMT, and PM) in the State of Florida.
01.04	Discuss the specific statutes and regulations regarding the EMS system in Florida.
01.05	Discuss vehicle and equipment readiness.
01.06	Characterize the EMS system’s role in prevention and public education.
01.07	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
01.08	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.
01.09	Discuss the maintenance of and differences between certification and licensure for the EMS professional in the State of Florida and NREMT.
01.10	Define quality improvement and discuss the EMT’s role in the process.
01.11	Identify the basics of common methods of payment for healthcare services.
01.12	Analyze attributes and attitudes of an effective leader.
01.13	Demonstrate effective techniques for managing team conflict.
01.14	Describe factors that influence the current delivery system of healthcare.

01.15	Discuss the importance of continuing medical education and skills retention.
01.16	Assess personal attitudes and demeanor that may distract from professionalism.
01.17	Serve as a role model and exhibit professional behaviors in the following areas:
01.17.01	integrity
01.17.02	empathy
01.17.03	self-motivation
01.17.04	appearance and personal hygiene
01.17.05	self-confidence
01.17.06	communications ( including phone, email and social media etiquette)
01.17.07	time management
01.17.08	teamwork and diplomacy
01.17.09	respect
01.17.10	patient advocacy (inclusive of those with special needs, alternate life styles and cultural diversity)
01.17.11	careful delivery of service
02.0	<b>Research:</b> Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making. – The student will be able to:
02.01	Discuss EMS research and evidence based decision making
02.01.01	Conduct scientific literature searches
02.01.02	Read, interpret, and extract information from journal articles relevant to a project
02.02	Explain the importance of assessing and treating patients based on evidence based decision-making.
02.03	Interpret graphs, charts, and tables.
02.04	Measure time, temperature, distance, capacity, and mass/weight.
02.05	Convert and use traditional and metric units.
02.06	Make estimations, approximations and judge the reasonableness of the result.
02.07	Convert time from a 12 hour format to a 24 hour format
02.08	Demonstrate ability to evaluate and draw conclusions.
02.09	Calculate ratios.
02.10	Explain the rationale for the ems system gathering data.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Explain the need to determine scene safety.

03.02	Discuss the importance of body substance isolation (BSI).
03.03	Describe the steps and equipment the EMT should take for personal protection from airborne and blood borne pathogens and communicable disease.
03.04	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
03.05	Discuss the steps the EMT should take when approaching a family confronted with death and dying.
03.06	Recognize the warning signs of personal stress and discuss the strategies and resources available for EMTs to utilize.
03.07	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
03.08	Discuss the guidelines and safety precautions to be followed when lifting and moving patients and equipment.
03.09	Discuss patient positioning in common emergency situations.
03.10	Discuss situation that may require the use of medical restraints on the patient and explain guidelines and safety consideration for their use.
03.11	Define “infectious disease” and “communicable disease.”
03.12	Describe the routes of transmission and associated risks for infectious disease.
03.13	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis and HIV.
03.14	Explain how immunity to infectious diseases is acquired.
03.15	Explain post exposure management of exposure to patient blood or body fluids, including proper notification documentation.
03.16	Describe the components of physical fitness and mental wellbeing.
03.17	Identify personal health practices and environmental factors, which affect physical, mental, and emotional wellbeing.
03.18	Discuss complementary and alternative health practices.
03.19	Explain the basic concepts of positive self-image, wellness and stress.
03.20	Discuss the need for a wellness and stress control plan that can be used in personal and professional life.
03.21	Explore the importance of adequate nutrition (i.e. U.S. Department of Agriculture’s MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> )).
03.22	Demonstrate safe behaviors in the proper use of medical equipment.
03.23	Explain the theory of root- cause analysis.
03.24	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.

03.25	Identify and practice security procedures for medical supplies and equipment in the various healthcare settings.
03.26	Describe fire, safety, disaster and evacuation procedures in the various healthcare settings.
03.27	Discuss applicable accrediting and regulatory agency patient safety guidelines.
04.0	<b>Documentation:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing. – The student will be able to:
04.01	Discuss applications of technology in healthcare.
04.02	Demonstrate basic computer skills.
04.03	Interpret and utilize information from electronic health records.
04.04	Identify methods of electronic communication to access and distribute data.
04.05	Describe the use and importance of properly written communication and patient care documentation.
04.06	Explain the legal implication of the patient care report.
04.07	Identify the minimum dataset reference patient information and administrative information on the patient care report.
04.08	Understand how to document refusal of care, including legal implications.
04.09	Discuss the implications of the Health Insurance Portability and Accountability Act of 1996 on confidential documentation.
04.10	Describe the special considerations concerning mass casualty incident documentation.
04.11	Demonstrate completion of a patient care report for a medical and trauma patient.
05.0	<b>EMS System Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication. – The student will be able to:
05.01	Understand the basic principles of the various types of communications equipment used in EMS.
05.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.
05.03	Explain the rationale for providing efficient and effective radio communications and patient reports.
05.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
05.05	Perform an organized and concise radio transmission.
05.06	Perform an organized, concise verbal patient report that would be given to the staff at a receiving facility.
05.07	Perform a brief, organized verbal report that would be given during transfer of care at an incident scene.

06.0	<b>Therapeutic Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication. – The student will be able to:
06.01	Describe principles of therapeutic and effective communication with patients.
06.02	Discuss basic speaking and active listening skills.
06.03	Recognize the importance of patient/client educations regarding healthcare.
06.04	Discuss the adjustment of communication strategies to effectively communicate with patients with:
06.04.01	differing age groups
06.04.02	differing developmental stages
06.04.03	special needs
06.04.04	Differing cultures, including language barriers
06.05	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
06.06	Discuss the strategies for interviewing persons in special situations.
06.07	Distinguish between and respond to verbal and non-verbal cues.
06.08	Analyze elements of communication using a sender-receiver/close loop model.
06.09	Exhibit positive non-verbal behaviors.
06.10	Establish proper patient rapport.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics. – The student will be able to:
07.01	Discuss the rational, importance, and limitations of patient autonomy.
07.02	Differentiate between expressed, implied and involuntary consent.
07.03	Discuss the methods of obtaining consent and procedures for minors.
07.04	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
07.05	Discuss the implications for the EMT in patient refusal of care and/or transport.
07.06	Explain the importance, necessity and legality of patient confidentiality.
07.07	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
07.08	Discuss State of Florida and Federal special reporting situations including:
07.08.01	abuse
07.08.02	sexual assault
07.08.03	gunshot and knife wounds

	07.08.04	communicable disease
	07.08.05	animal Bites
07.09	Differentiate between civil tort and criminal actions.	
07.10	Discuss the elements of negligence and defenses/protections from liability.	
07.11	Discuss the role of the EMT at crime scenes and preservation of evidence.	
07.12	Define ethics and morality and discuss their implication for the EMT.	
07.13	Discuss Florida legislation such as:	
	07.13.01	Baker Act (FS 394.451)
	07.13.02	Marchman Act (FS 397.601 and FS 397.675)
	07.13.03	Emergency Examination and Treatment of Incapacitated Persons Act (FS 401.445)
07.14	Differentiate between the scope of practice and the standard of care as applied to the EMT.	
07.15	Discuss the legal concepts and limitations of immunity, including Good Samaritan statutes and governmental immunity.	
07.16	Describe the appropriate patient management and care techniques in a refusal of care situation.	
07.17	Analyze the relationship between the law, morals and ethics in EMS and the premise that should under lie the EMTs ethical decisions.	
07.18	Describe the criteria necessary to honor an advance directive.	
07.19	Explain the rationale for the needs, benefits and varying degrees of advance directives.	
08.0	<b>Anatomy and Physiology:</b> Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. – The student will be able to:	
08.01	Identify the following topographic terms:	
	08.01.01	medial
	08.01.02	lateral
	08.01.03	proximal
	08.01.04	distal
	08.01.05	superior
	08.01.06	inferior
	08.01.07	anterior
	08.01.08	posterior
	08.01.09	midline
	08.01.10	right and left
	08.01.11	mid-clavicular
	08.01.12	bilateral
	08.01.13	mid-axillary
08.02	Describe the life support chain, aerobic metabolism, and anaerobic metabolism.	

08.03	Define anatomy, physiology, pathophysiology, and homeostasis.
08.04	Identify and describe the anatomical structures and functions of the following:
08.04.01	skeletal system
08.04.02	muscular system
08.04.03	respiratory System
08.04.04	circulatory/ Cardiovascular system
08.04.05	nervous System
08.04.06	integumentary system
08.04.07	digestive system
08.04.08	endocrine system
08.04.09	renal system
08.04.10	reproductive system
08.04.11	lymphatic System
08.05	Explain cellular anatomy and physiology.
08.06	Explain cellular respiration.
08.07	Discuss cell division.
08.08	Describe the different types of muscle tissues including skeletal, smooth and cardiac.
08.09	Name and identify the location of the bones of the axial and appendicular skeleton.
08.10	Describe the classification and types of joints.
08.11	Discuss the mechanisms of breathing including:
08.11.01	mechanical ventilation
08.11.02	pulmonary volumes
08.11.03	dead space
08.11.04	lung compliance
08.12	Explain the diffusion of gases in external and internal respiration.
08.13	Describe oxygen and carbon dioxide transport in the blood.
08.14	Describe nervous and chemical mechanisms that regulate respirations.
08.15	Discuss respiration and acid-base balance.
08.16	Discuss the hemodynamics of blood pressure.
08.17	Discuss the role of nutrition, metabolism and body temperature on body function.
08.18	Describe the causes, advantages, and disadvantages of a fever.



08.19	Discuss the hypothalamus functions as the thermostat in the body.
09.0	<b>Medical Terminology:</b> Demonstrate a fundamental knowledge in the use of medical terminology. – The student will be able to:
09.01	Identify medical terminology word parts such as:
09.01.01	root words
09.01.02	prefixes
09.01.03	suffixes
09.01.04	combining forms
09.02	Correctly utilize medical terminology describing each of the following:
09.02.01	body structures
09.02.02	functions
09.02.03	conditions and disorders
09.02.04	body regions
09.02.05	cavities
09.02.06	areas
09.02.07	landmarks
09.03	Correctly use medical abbreviations and symbols.
09.04	Read and understand basic medical documentation in medical records and medical reports.
09.05	Communicate with healthcare professionals utilizing basic medical terminology.
09.06	Explain the rationale for using accepted medical terminology correctly.
10.0	<b>Pathophysiology:</b> Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation. – The student will be able to:
10.01	Discuss signs of irreversible death.
10.02	Review the anatomy and physiology of the respiratory and cardiovascular systems.
10.03	Discuss and identify the pathophysiology of respiratory failure and respiratory and cardiac arrest.
10.04	Understand shock, including the pathophysiology, causes, and the signs and symptoms associated with the various types of shock.
10.05	Discuss the variations in the pathophysiology of shock across the life span.
11.0	<b>Life Span Development:</b> Demonstrate a fundamental knowledge of life span development to patient assessment and management. – The student will be able to:
11.01	Describe the major physiologic and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care. – The student will be able to:

12.01	Define public health and explain the goal of the public health field.
12.02	Identify the EMS role within the public health field.
12.03	Discuss basic concepts of epidemiology.
12.04	Discuss ways of EMS involvement in injury prevention.
12.05	Identify areas of need for prevention programs in the community.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency. –The student will be able to:
13.01	Explain the “rights” of medication administration and describe how each one related to EMS.
13.02	Discuss and differentiate the various medication forms and the appropriate routes of administration
13.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
13.04	Discuss the components and elements of a drug profile including:
13.04.01	class
13.04.02	actions
13.04.03	contraindications
13.04.04	side effects
13.04.05	dose
13.04.06	route
13.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
14.0	<b>Emergency Medications:</b> Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT. – The student will be able to:
14.01	State the following for each medication that can be administered by an EMT as dictated by the State of Florida and local medical direction :
14.01.01	class
14.01.02	generic and trade names
14.01.03	actions
14.01.04	indication
14.01.05	contraindications
14.01.06	complications
14.01.07	routes of administration
14.01.08	side effects
14.01.09	interactions
14.01.10	Doses of medications
14.02	Discuss the forms in which the medications may be found.

14.03	Demonstrate the steps in properly inspecting each type of medication.
14.04	Discuss the difference between administration versus assistance of patient medications.
15.0	<b>Airway Management:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of airway management across the life span within the scope of practice of the EMT. – The student will be able to:
15.01	Review the structures and functions of the respiratory system.
15.02	Describe appropriate airway management for a patient with or without adequate breathing.
15.03	Describe indications for and demonstrate the steps in performing the head-tilt chin-lift and jaw thrust in all age groups.
15.04	Define, identify and describe the following:
15.04.01	tracheostomy
15.04.02	laryngectomy
15.04.03	stoma
15.04.04	tracheostomy tube
15.05	Describe the special considerations in airway management for the pediatric patient.
15.06	Demonstrate the techniques of suctioning.
15.07	Demonstrate relief of FBAO.
15.08	Demonstrate how to insert an oral and nasal -airway adjunct.
15.09	Demonstrate how to insert both esophageal and supra-glottic airways.
16.0	<b>Respirations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of respiration. – The student will be able to:
16.01	Review the pulmonary ventilation process to include mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.).
16.02	Describe the oxygenation process.
16.03	Explain both external and internal respiration process.
16.04	Discuss the various pathophysiologies of the respiratory system.
16.05	Describe assessment and management for adequate and inadequate respiration, including the use of pulse oximetry and capnography.
16.06	Describe the following regarding supplemental oxygen delivery devices:
16.06.01	indications
16.06.02	contraindications
16.06.03	advantages
16.06.04	disadvantages
16.06.05	complications

16.06.06	liter flow range
16.06.07	concentration of delivered oxygen
16.06.08	procedures
16.06.09	purpose
16.06.10	components
16.07	Review the anatomy and physiology of the respiratory system including:
16.07.01	control of respirations
16.07.02	mechanics of respiration
16.07.03	pulmonary ventilation
16.07.04	oxygenation
16.07.05	mechanical ventilation
16.08	Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
16.09	Demonstrate the correct operation of oxygen tanks and regulators.
16.10	Demonstrate the use of high, medium, low, and variable concentration oxygen delivery devices for all age groups.
16.11	Discuss the use of an oxygen humidifier and the requirements needed for its use.
16.12	Discuss the differences between negative pressure and positive pressure ventilation.
17.0	<b>Artificial Ventilations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span. – The student will be able to:
17.01	Demonstrate how to ventilate a patient with a pocket mask.
17.02	Demonstrate the safe and effective ventilation for a patient with a BVM for one or two rescuers using oral-nasal adjuncts with appropriate airway positioning.
17.03	Discuss the signs of adequate and inadequate ventilation using the BVM.
17.04	Describe the steps involved in performing a comprehensive assessment of ventilations.
17.05	Demonstrate how to ventilate a patient with a stoma.
17.06	Demonstrate the use of various devices used in the assessment of supra-glottic airway placement.
17.07	Describe the following for a patient with an automatic transport ventilator (ATV):
17.07.01	indications
17.07.02	contraindications
17.07.03	advantages
17.07.04	disadvantages
17.07.05	complications
17.07.06	technique for ventilating
17.08	Describe the following for a patient with a CPAP:

	17.08.01	indications
	17.08.02	contraindications
	17.08.03	advantages
	17.08.04	disadvantages
	17.08.05	complications
	17.08.06	technique for ventilating
18.0	<b>Scene Size-Up:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations. – The student will be able to:	
	18.01	Recognize and describe hazards/potential hazards at the scene.
	18.02	Discuss common mechanisms of injury/nature of illness.
	18.03	Discuss the priority considerations for multiple-patient situations.
	18.04	Explain why it is important for the EMT to anticipate and determine the need for additional or specialized resources.
	18.05	Discuss the importance of continuous scene assessment to ensure safety of the EMS team and the patient.
	18.06	Discuss the minimum standard precautions that should be followed and PPE that should be worn as appropriate.
	18.07	Discuss special considerations for dealing with a violent scene.
	18.08	Explain the rationale for crew members to evaluate scene safety prior to entering.
	18.09	Explain how patient situations affect your evaluation of mechanism of injury or illness.
19.0	<b>Primary Assessment:</b> Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations. – The student will be able to:	
	19.01	Summarize the elements of a general impression of the patient.
	19.02	Explain the reason for performing a primary assessment.
	19.03	Discuss and demonstrate methods of assessing level of responsiveness using AVPU.
	19.04	Discuss and demonstrate methods of assessing the airway and providing airway care across the life span.
	19.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
	19.06	Differentiate between a patient with adequate and inadequate breathing.
	19.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
	19.08	Discuss and demonstrate assessing the patient for external bleeding.
	19.09	Describe and demonstrate the assessment and interpretation of skin color, temperature, moisture and capillary refill across the life

	span.
	19.10 Explain the reasons prioritizing a patient for care and transport.
	19.11 Describe when it is appropriate to expose the patient completely.
	19.12 Differentiate between critical life-threatening, potentially life- threatening, and non-life-threatening patient presentations.
20.0	<b>History-Taking:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking. – The student will be able to:
	20.01 Determine and investigate the chief complaint.
	20.02 Describe components of the patient history.
	20.03 Explain the importance of obtaining a SAMPLE and OPQRST history.
	20.04 Acknowledge the feelings patients experience during assessment.
	20.05 Discuss the value of obtaining a family and social history.
	20.06 Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
21.0	<b>Secondary Assessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment. – The student will be able to:
	21.01 Discuss the components and techniques of the physical exam and skills involved.
	21.02 Discuss the indications for performing: 21.02.01 rapid assessment 21.02.02 focused exam 21.02.03 head to toe exam
	21.03 Demonstrate: 21.03.01 rapid exam 21.03.02 focused exam 21.03.03 head to toe exam
	21.04 Describe and demonstrate the techniques of inspection, palpation, percussion, and auscultation.
	21.05 Describe and demonstrate the importance of obtaining a baseline set of vital signs.
	21.06 Discuss blood pressure ranges across the life span.
22.0	<b>Monitoring Devices:</b> Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT. – The student will be able to:
	22.01 Describe and demonstrate the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies.

	22.01.01	pulse oximetry
	22.01.02	glucometry
	22.01.03	capnography
	22.01.04	noninvasive BP monitoring
	22.01.05	thermometry
	22.01.06	telemetry
	22.02	Demonstrate proper placement of a cardiac monitor and diagnostic ECG leads.
23.0	<b>Reassessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations. – The student will be able to:	
	23.01	Describe the components of reassessment and demonstrate the skills involved.
	23.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
	23.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
	23.04	Demonstrate the reassessment of patients across the life span.
24.0	<b>Medical Overview:</b> Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints. – The student will be able to:	
	24.01	Identify factors that complicate patient assessment:
	24.01.01	scene safety
	24.01.02	environmental factors
	24.01.03	chief complaint
	24.01.04	EMT preconceptions
	24.01.05	distracting injuries
	24.01.06	tunnel vision
	24.01.07	patient cooperation
	24.01.08	EMT attitude
	24.02	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
25.0	<b>Neurology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span. – The student will be able to:	
	25.01	Review the anatomy and physiology of the nervous system.
	25.02	Describe the pathophysiology of the following neurologic disorders:
	25.02.01	altered mental status
	25.02.02	stroke
	25.02.03	transient ischemic attack
	25.02.04	headache
	25.02.05	seizures
	25.02.06	syncope

25.03	Discuss and identify the causes, signs and symptoms of ischemic strokes, hemorrhagic strokes, and transient ischemic attacks and their similarities and differences.
25.04	Discuss and demonstrate how to use a stroke scoring system in the assessment of patients with suspected stroke.
25.05	Define and differentiate generalize seizure, partial seizure and status epilepticus and list their possible causes.
25.06	Define and differentiate migraine headache, sinus headache, tension headache and discuss how to distinguish harmless headaches from something more serious.
25.07	Define “altered mental status” and identify the possible causes.
25.08	Describe and demonstrate the assessment and management of the patient with various neurological emergencies in all age groups to include:
25.08.01	strokes
25.08.02	headaches
25.08.03	seizures
25.08.04	altered mental status
25.09	Discuss the transport of the stroke patient to the appropriate treatment center.
26.0	<b>Abdominal and Gastrointestinal Disorder:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
26.01	Review the basic anatomy and physiology the gastrointestinal, genital and urinary systems.
26.02	Define and describe the pathophysiology of the following abdominal and gastrointestinal disorders:
26.02.01	abdominal pain
26.02.02	acute abdomen
26.02.03	peritonitis
26.02.04	appendicitis
26.02.05	pancreatitis
26.02.06	cholecystitis
26.02.07	gastrointestinal bleeding
26.02.08	esophageal varices
26.02.09	gastroenteritis
26.02.10	ulcers
26.02.11	intestinal obstruction
26.02.12	hernia
26.02.13	abdominal aortic aneurysm
26.03	Identify the signs and symptoms of common GI disorders.
26.04	Describe and demonstrate the assessment and management of the patient with various gastrointestinal emergencies.
26.05	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.



27.0	<b>Immunology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span. – The student will be able to:
27.01	Define and differentiate allergic reaction and anaphylaxis.
27.02	Describe the pathophysiology of the following immunology disorders: 27.02.01 allergic reaction 27.02.02 anaphylaxis 27.02.03 anaphylactic shock
27.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an allergic or anaphylactic reaction.
27.04	Review the following for the epinephrine auto-injector: 27.04.01 generic and trade names 27.04.02 medication forms 27.04.03 dose 27.04.04 administration 27.04.05 action 27.04.06 contraindications
27.05	Demonstrate the use of epinephrine auto-injector.
27.06	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
27.07	Describe the incidence, morbidity and mortality of anaphylaxis.
27.08	Recognize the signs and symptoms related to anaphylaxis.
27.09	Describe the risk factors for and prevention of anaphylaxis and appropriate patient education.
27.10	Discuss common antigens most frequently associated with anaphylaxis.
27.11	Explain the importance of separating the patient from the allergen when possible.
28.0	<b>Infectious Disease:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span. – The student will be able to:
28.01	Discuss the causes of infectious diseases
28.02	Describe the pathophysiology of infectious diseases of significant public health concern.
28.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an infectious disease.
28.04	Discuss mandatory notification to state or federal agencies of various diseases.
28.05	Identify patients with risk factors for infectious disease.
28.06	Explain the principles and practices of infection control in prehospital care.

28.07	Describe and discuss the rationale for the various types of PPE.
28.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).
28.09	Discuss decontamination of the ambulance and disinfection of patient care equipment, and areas in which care of the patient occurred.
28.10	Describe the actions to take if the EMS provider is exposed to an infectious disease.
28.11	Demonstrate the ability to comply with body substance isolation guidelines.
28.12	Discuss the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS)
29.0	<b>Endocrine Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span. – The student will be able to:
29.01	Review the anatomy and physiology of the endocrine system and its main function in the body.
29.02	Describe the pathophysiology and signs and symptoms of the following endocrine disorders:
29.02.01	insulin dependent Diabetes Mellitus
29.02.02	non-insulin dependent Diabetes Mellitus
29.02.03	hypoglycemia
29.02.04	hyperglycemia
29.02.05	Diabetic Ketoacidosis(DKA)
29.02.06	Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNS)
29.03	Define and differentiate between Type I and Type II Diabetes.
29.04	Identify and demonstrate the steps in the management of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
29.05	Review the following for oral glucose:
29.05.01	generic and trade names
29.05.02	medication forms
29.05.03	dose
29.05.04	administration
29.05.05	action
29.05.06	contraindications
29.06	Demonstrate the steps of using a glucometer device and administering oral glucose.
29.07	Describe and demonstrate the assessment and the management of the patient experiencing an endocrinologic emergency to include hypo- and hyper-glycemia.
29.08	Discuss the general assessment findings associated with endocrinologic emergencies.
30.0	<b>Psychiatric:</b> Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span. – The student will be able to:

30.01	Differentiate among behavior, psychiatric disorders and behavioral emergencies
30.02	Discuss common psychiatric disorders and behavioral emergencies.
30.03	Discuss the general factors that may cause an alteration in a patient's behavior.
30.04	Discuss the risk factors/signs or symptoms of various psychiatric emergencies to include suicide.
30.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
30.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
30.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
30.08	Describe the special considerations for the safety of the EMS provider and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
30.09	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency.
30.10	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.0	<b>Cardiovascular:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span. – The student will be able to:
31.01	Review the basic anatomy and physiology of the cardiovascular system.
31.02	Describe the pathophysiology and signs and symptoms of the following cardiovascular disorders:
31.02.01	acute coronary syndrome
31.02.02	angina pectoris
31.02.03	thromboembolism
31.02.04	myocardial infarction
31.02.05	hypertensive emergencies
31.02.06	aortic aneurysm/dissection
31.02.07	left and right sided heart failure
31.02.08	cardiogenic shock
31.02.09	cardiac arrest
31.03	Describe and demonstrate the assessment and management of the patient experiencing a cardiac emergency.
31.04	Discuss the indications and contraindications for automated external defibrillation (AED).
31.05	Explain the impact of age and weight on defibrillation.
31.06	Discuss the position of comfort for patients with various cardiac emergencies.
31.07	Explain the rationale for early defibrillation.

31.08	Discuss and differentiate among various types of external defibrillators.
31.09	Discuss and differentiate among the various types of implanted cardiac devices.
31.10	Understand the importance of maintenance and operators check list for AED's.
31.11	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.
31.12	Explain the role medical direction plays in the use of automated external defibrillation.
31.13	Explain the rationale for administering nitroglycerin and ASA to a patient with chest pain or discomfort.
31.14	Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
31.15	Demonstrate the assessment and documentation of patient response to nitroglycerin.
31.16	Discuss the purpose and use of CPR assist devices.
32.0	<b>Toxicology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span. – The student will be able to:
32.01	Define and differentiate among toxicology, poisoning, and overdose.
32.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
32.02.01	food poisoning
32.02.02	carbon monoxide poisoning
32.02.03	cyanide poisoning
32.02.04	exposure to acid or alkaline substances
32.02.05	exposure to hydrocarbons
32.02.06	methanol ingestion
32.02.07	isopropanol ingestion
32.02.08	ethylene glycol ingestion
32.02.09	exposure to poisonous plants
32.02.10	drug withdrawal
32.02.11	alcoholic syndrome
32.02.12	withdrawal syndrome (including delirium tremens)
32.02.13	illicit drug use
32.02.14	medication overdose
32.02.15	opioid overdose
32.02.16	organa phosphate overdose
32.03	Discuss various ways that toxins enter the body.
32.04	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
32.05	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.

32.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
32.07	Review the following for Narcan (naloxone):
32.07.01	generic and trade names
32.07.02	medication forms
32.07.03	dose
32.07.04	administration
32.07.05	action
32.07.06	contraindications
33.0	<b>Respiratory:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span – The student will be able to:
33.01	Review the basic anatomy and physiology of the respiratory system.
33.02	Describe the pathophysiology and signs and symptoms of the following respiratory disorders:
33.02.01	Chronic Obstructive Pulmonary Disease
33.02.02	Asthma
33.02.03	Pulmonary Edema
33.02.04	Spontaneous Pneumothorax
33.02.05	Hyperventilation Syndrome
33.02.06	Cystic Fibrosis
33.02.07	Pulmonary Embolism
33.02.08	Pneumonia
33.02.09	Viral Respiratory Infections
33.02.10	Poisonous Exposures
33.02.11	Bacterial respiratory infections
33.03	Discuss signs of adequate air exchange.
33.04	Discuss the signs and symptoms of a patient across the continuum from respiratory distress to failure.
33.05	Describe and demonstrate the assessment and management of the patient with a respiratory emergency.
33.06	Review the following for the metered-dose inhalers and small volume nebulizers for medications within the scope of practice of the EMT:
33.06.01	generic name
33.06.02	medication forms
33.06.03	dose
33.06.04	administration
33.06.05	action
33.06.06	indications
33.06.07	contraindications
33.07	Describe and demonstrate the steps in facilitating the use of an inhaler and a small volume nebulizer.

33.08	Differentiate between upper and lower airway obstruction.
33.09	Demonstrate assessment and interpretation of normal and abnormal lung and breath sounds.
34.0	<b>Hematology:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span. –The student will be able to:
34.01	Review the compositions and functions of blood and plasma.
34.02	Describe the pathophysiology of the following hematology disorders:
34.02.01	Anemia
34.02.02	Sickle Cell Anemia / Sickle Cell Crisis
34.02.03	Hemophilia
34.03	Describe and demonstrate the assessment and the management of the patient with a hematological disorder.
35.0	<b>Genitourinary /Renal:</b> Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergency across the life span. – The student will be able to:
35.01.01	Review the basic anatomy and physiology of the genitourinary and renal systems.
35.02	Describe the pathophysiology and signs and symptoms of the following genitourinary/ renal disorders:
35.02.01	urinary tract infection
35.02.02	kidney stones
35.02.03	kidney failure
35.03	Discuss the basic principles of kidney dialysis.
35.04	Discuss the recognition and complications of urinary catheters.
35.05	Describe and demonstrate the assessment and management of the patient with a dialysis emergency.
36.0	<b>Gynecology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span. – The student will be able to:
36.01	Review the basic anatomy and physiology of the female reproductive system.
36.02	Describe the pathophysiology and signs and symptoms of the following gynecologic disorders and emergencies, including but not limited to:
36.02.01	sexual assault
36.02.02	nontraumatic vaginal bleeding
36.02.03	menstrual pain
36.02.04	ovarian cyst
36.02.05	endometritis
36.02.06	endometriosis
36.02.07	pelvic inflammatory disease
36.02.08	Sexually Transmitted Disease

36.03	Describe and demonstrate the assessment and management of the patient experiencing a gynecologic emergency.
36.04	Describe the assessment and management of a patient who has experienced a sexual assault including the psychosocial impact and assessment findings/presentations.
36.05	Discuss the professional and psychological importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
36.06	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
37.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
37.01	Review the basic anatomy and physiology of the musculoskeletal system.
37.02	Describe and demonstrate the assessment and management of the patient in all age groups with a non-traumatic musculoskeletal emergency.
38.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span –The student will be able to:
38.01	Describe and demonstrate the assessment and management of the patient in all age groups with abnormal conditions affecting the eyes, ears, nose and throat, including epistaxis.
39.0	<b>Shock and Resuscitation:</b> Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span. – The student will be able to:
39.01	Discuss and identify causes and pathophysiology of the categories of hemorrhage and shock.
39.02	Review causes and pathophysiology of respiratory failure and arrest.
39.03	Review causes and pathophysiology of cardiac failure or arrest.
39.04	Discuss the various types and degrees of shock.
39.05	Discuss post resuscitation management.
39.06	Explain the system components of CPR, the links in the AHA chain of survival and how each relates to patient survival.
39.07	Define and differentiate between compensated and decompensated shock.
39.08	Discuss the importance of teamwork in the successful management of the critical patient.
39.09	Demonstrate how to perform one and two rescuer CPR, adult, child, and infant.
39.10	Demonstrate how to perform rescuer level appropriate defibrillation in an adult, child, and infant patient.
39.11	Demonstrate rapid decision making based on differential field diagnosis of the critical patient with a peri-arrest condition.
39.12	Describe and demonstrate the assessment and management of the patient with hemorrhage and shock.

40.0	<b>Trauma Overview:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span. – The student will be able to:
40.01	Discuss pathophysiology of the trauma patient.
40.02	Discuss the components of a comprehensive trauma systems and levels of trauma centers.
40.03	Describe the considerations for different transportation modes to a trauma center.
40.04	Discuss the kinematics of blunt and penetrating trauma.
40.05	Discuss and describe significant and non-significant Mechanism of Injury (MOI) and provide examples of each.
40.06	Demonstrate the application of the State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code (F.A.C.).
40.07	Discuss the National Trauma Triage Protocol of injured Patients.
40.08	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
40.09	Identify the need for rapid intervention transport of the trauma patient.
41.0	<b>Bleeding:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span. – The student will be able to:
41.01	Review the anatomy and physiology of the circulatory system.
41.02	Discuss the different types of bleeding and classes of hemorrhage.
41.03	Review signs and symptoms of shock (hypo-perfusion).
41.04	Demonstrate effective hemorrhage control to include application of a tourniquet.
41.05	Review the pathophysiology of hemorrhagic shock.
41.06	Recognize the need for rapid transport for patients that are bleeding and showing signs of shock (hypo-perfusion).
41.07	Describe and demonstrate the assessment and management of a patient with hemorrhagic shock.
41.08	Discuss the possible complications of an improperly applied dressing, bandage, tourniquet, and hemostatic agents.
42.0	<b>Chest Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of chest trauma across the life span. –.The student will be able to:
42.01	Review the anatomy and physiology of the thoracic/chest cavity and respiratory system.
42.02	Differentiate between a pneumothorax (open, simple and tension) and hemothorax.
42.03	Discuss the pathophysiology, signs and symptoms, and MOI of myocardial injuries, including the following: 42.03.01 pericardial tamponade



	42.03.02	myocardial contusion
	42.03.03	myocardial rupture
	42.03.04	commotio cordis
	42.03.05	aortic sheerer
42.04	Discuss the pathophysiology, signs and symptoms, and MOI of specific chest wall injuries, including the following:	
	42.04.01	rib fracture
	42.04.02	flail segment
	42.04.03	sternal fracture
42.05	Describe and demonstrate the assessment and management of chest trauma.	
43.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of abdominal and genitourinary trauma across the life span. – The student will be able to:	
43.01	Review the anatomy and physiology of the abdominal cavity and genitourinary system.	
43.02	Discuss the pathophysiology, signs and symptoms, and MOI for abdominal trauma including hollow and solid injuries.	
43.03	Describe and demonstrate the assessment and management of a patient with a suspected abdominal or genitourinary injury/trauma.	
44.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:	
44.01	Review the anatomy and physiology of the musculo-skeletal system.	
44.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.	
44.03	Discuss the different types of orthopedic trauma including fracture classifications.	
44.04	Explain the rationale for stabilization of an injured extremity.	
44.05	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma.	
44.06	Discuss the following management techniques:	
	44.06.01	heat therapy
	44.06.02	cold therapy
	44.06.03	splinting
44.07	List the six “P’s” of orthopedic injury assessment.	
44.08	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.	
44.09	Review age-associated changes in the bones.	
44.10	Discuss the proper procedures to package an amputated body part for replantation.	
44.11	Explain the rationale for splinting at the scene versus load and go.	

	44.12	Demonstrate the proper use of various splinting materials and devices to include improvised and traction splints.
45.0		<b>Soft Tissue Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
	45.01	Review anatomy and physiology of the integumentary system to include the layers of the skin.
	45.02	Describe the pathophysiology, signs and symptoms, and MOI of soft tissue trauma.
	45.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
	45.04	Identify types of burn injuries, including:
	45.04.01	thermal burn
	45.04.02	chemical burn
	45.04.03	electrical burn
	45.04.04	radiation exposure
	45.05	Describe the depth classifications of burn injuries, including:
	45.05.01	superficial burn
	45.05.02	partial-thickness burn
	45.05.03	full-thickness burn
	45.05.04	other depth classifications
	45.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines,” the “rule of palms,” and other methods.
	45.07	Explain how the seriousness of a burn is related to its depth and percent of body surface area (BSA) involved.
	45.08	Review the various management techniques for hemorrhage control.
	45.09	Differentiate among the types of injuries requiring the use of an occlusive versus non- occlusive dressing.
	45.10	Demonstrate the assessment and management of specific burn injuries including:
	45.10.01	thermal
	45.10.02	inhalation
	45.10.03	chemical
	45.10.04	electrical
	45.10.05	radiation
46.0		<b>Head, Facial, Neck, and Spine Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck and spine trauma across the life span. – The student will be able to:
	46.01	Review the anatomy and physiology of the head, face, neck and spine.
	46.02	Describe the pathophysiology, signs and symptoms, and MOI for head, face, neck, and spine trauma.
	46.03	Describe and demonstrate the assessment and management of a patient with the following traumas to the head, face, neck, and spine:
	46.03.01	penetrating neck trauma

	46.03.02	laryngotracheal injury
	46.03.03	skull fracture
	46.03.04	facial fracture
	46.03.05	eye injury (foreign body)
	46.03.06	dental trauma
	46.04	Recognize and manage life threats due to face, head, neck, and spine trauma.
	46.05	Discuss and demonstrate the utilization of the Glasgow Coma Scale.
47.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span. – The student will be able to:	
	47.01	Review the anatomy and physiology of the nervous system.
	47.02	Discuss the pathophysiology, signs and symptoms, and MOI for brain and spinal cord trauma.
	47.03	Describe and demonstrate the assessment and management of a patient with a brain and/or spinal cord trauma.
	47.04	Discuss the rationale and potential complications of spinal motion restriction of the entire spine when a cervical spine injury is suspected.
	47.05	Given a scenario, discuss whether or not to remove a helmet prior to transport of a patient.
	47.06	Demonstrate various methods for stabilization and removal of a helmet.
	47.07	Discuss documentation of assessment before, during, and after spinal motion restriction.
48.0	<b>Special Considerations in Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of trauma patients with special considerations across the life span. – The student will be able to:	
	48.01	Review the anatomy and physiology for the following trauma patients:
	48.01.01	pregnant
	48.01.02	pediatric
	48.01.03	geriatric
	48.02	Discuss the pathophysiology, signs and symptoms, and MOI of trauma in the following patients:
	48.02.01	pregnant
	48.02.02	pediatric
	48.02.03	geriatric
	48.03	Discuss and demonstrate unique assessment and management considerations for the following trauma patients:
	48.03.01	pregnant
	48.03.02	pediatric
	48.03.03	geriatric
	48.03.04	cognitively impaired
49.0	<b>Environmental Emergencies:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of environmental emergencies across the life span. – The student will be able to:	

49.01	Define drowning and discuss its incidence, risk factors and prevention.
49.02	Discuss the pathophysiology, signs and symptoms, and MOI of the following: 49.02.01 drowning and water related incidents 49.02.02 temperature-related illness 49.02.03 bites and envenomation 49.02.04 dysbarism such as high-altitude injuries 49.02.05 diving injuries 49.02.06 lightning (electrical) injury 49.02.07 high altitude illness 49.02.08 radiation exposure
49.03	Describes and demonstrate the assessment and management for a patient with the following: 49.03.01 drowning and water related incidents 49.03.02 temperature-related illness 49.03.03 bites and envenomation 49.03.04 dysbarism such as high-altitude injuries 49.03.05 diving injuries 49.03.06 lightning (electrical) injury 49.03.07 high altitude illness 49.03.08 radiation exposure
49.04	Discuss the fundamental principles of the gas laws including: Boyle's, Dalton, Henry and Charles.
49.05	Discuss scene management and provider safety considerations for a variety of environmental emergencies.
49.06	Explain the five ways a body can lose heat.
49.07	Discuss potentially life threatening venomous species of insects, spiders and snakes in the U.S.
50.0	<b>Multi-Systems Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span. – The student will be able to:
50.01	Discuss the pathophysiology, signs and symptoms, and MOI of multi-system trauma and blast injuries.
50.02	Describe and demonstrate assessment and management considerations for a patient of multi system trauma and blast injuries.
51.0	<b>Obstetrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT. – The student will be able to:
51.01	Identify and describe the anatomical and the physiological changes during pregnancy.
51.02	Define the stages of labor and discuss how to assess them.
51.03	Differentiate between cephalic and abnormal delivery.
51.04	Describe the management of a patient with pre-delivery emergencies.

51.05	Discuss and demonstrate the patient care measures for all stages of labor in a cephalic delivery for the mother and the newborn.
51.06	Describe the management of the mother post-delivery.
51.07	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
51.08	Describe the procedures for handling complications of delivery.
51.09	Describe special considerations when meconium is present in amniotic fluid or during delivery.
51.10	Identify the factors that lead to premature birth and low birth weight newborns.
51.11	Demonstrate the procedures for handling complications of pregnancy including pre-eclampsia, eclampsia, and high risk.
52.0	<b>Neonatal Care:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT. – The student will be able to:
52.01	Discuss and demonstrate assessment and management considerations of a neonate.
52.02	Define the term neonate.
52.03	Describe special patient care considerations of a premature baby.
52.04	Calculate the Apgar score given various newborn situations.
52.05	Discuss the common signs when ventilatory assistance is appropriate for a neonate.
52.06	Discuss and demonstrate the steps in resuscitation of a neonate.
52.07	Review the signs of hypovolemia in a newborn.
52.08	Discuss the effects maternal narcotic usage has on the newborn.
52.09	Discuss the management/treatment plan for vomiting in the neonate.
52.10	Discuss the assessment findings associated with common birth injuries in the neonate.
53.0	<b>Pediatrics:</b> Demonstrate a fundamental depth, fundamental breadth of knowledge of management of the pediatric patient within the scope of practice of the EMT. – The student will be able to:
53.01	Review the anatomy, physiology and pathophysiology differences of patients.
53.02	Discuss the differences in approaching and assessing patients.
53.03	Discuss and demonstrate assessment and management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
53.04	Describe the selection of appropriate airway adjuncts and ventilation devices.

53.05	Discuss complications of improper utilization of airway adjuncts and ventilation devices.
53.06	Describe the common causes, assessment and management of respiratory distress, failure, or arrest.
53.07	Discuss the common causes, assessment and management of hypo-perfusion.
53.08	Discuss the common causes, assessment and management of cardiopulmonary arrest.
53.09	Describe the common causes, assessment and management of altered level of consciousness.
53.10	Describe the common causes, assessment and management of trauma.
53.11	Describe the common causes, assessment and management of neurological emergencies.
53.12	Demonstrate proper technique for administering blow-by oxygen.
53.13	Review proper technique for suctioning.
53.14	Review appropriate use of airway adjuncts and ventilation devices.
53.15	Review age appropriate basic airway clearing maneuvers for a completely obstructed airway.
54.0	<b>Geriatrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT. – The student will be able to:
54.01	Define and discuss the term geriatrics.
54.02	Review the anatomy, physiology and pathophysiology of the geriatric patient.
54.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
54.04	Discuss the importance of fall prevention with the geriatric patient.
54.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
54.06	Describe the common causes, assessment, and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.0	<b>Patients with Special Challenges:</b> Demonstrate a simple depth, simple breadth of knowledge of the management of the patient with special challenges across the life span. –The student will be able to:
55.01	Discuss the special considerations required when providing emergency care to patients with:
55.01.01	abuse/neglect of vulnerable populations
55.01.02	homelessness
55.01.03	poverty
55.01.04	bariatrics
55.01.05	tech dependent
55.01.06	hospice/terminally ill

55.01.07	tracheostomy
55.01.08	home care
55.01.09	sensory deficit/loss
55.01.10	developmental disability
55.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
55.02.01	respiratory devices
55.02.02	cardiac devices
55.02.03	gastrourinary devices
55.02.04	central & peripheral IV catheters
55.03	Describe home care and the types of patients it serves and the services it encompasses.
55.04	Differentiate between hospice/palliative care and curative care.
55.05	Discuss the role of the EMT as a patient advocate for vulnerable populations.
56.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
56.01	Discuss the importance of performing regular vehicle and equipment inspection.
56.02	Demonstrate how to perform a daily inspection of an ambulance.
56.03	Review the general provisions of Florida laws relating to the operation of the ambulance.
56.04	Discuss the guidelines for operating an ambulance safely during emergency and non-emergency situation/incident.
56.05	Review considerations that are required for ensuring scene safety, including personal safety, patient safety, and traffic control.
56.06	Review how to clean and disinfect the ambulance and equipment.
57.0	<b>Incident Management:</b> Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
57.01	Discuss the importance of NIMS (National Incidence Management System) and its functional components.
57.02	Discuss unified command and when it is applicable.
57.03	Describe the role of command and the procedures for transfer of command.
57.04	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents:
57.04.01	safety
57.04.02	logistics
57.04.03	rehabilitation
57.04.04	staging,
57.04.05	treatment
57.04.06	triage

	57.04.07	transportation
	57.04.08	extrication/rescue
	57.04.09	morgue
	57.04.10	communications
	57.05	Discuss the physical and psychological signs of critical incident stress.
58.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:	
	58.01	Review essential elements of scene size-up when arriving at a potential MCI.
	58.02	Describe the role of the rescuers and EMS systems in planning for MCIs and disasters.
	58.03	Describe the role of the physician at multiple casualty incidents.
	58.04	Define triage and describe the principles of triage.
	58.05	Describe the START (simple triage and rapid treatment) and JUMP START method of initial triage.
	58.06	Describe techniques used to allocate patients to hospitals and track them.
	58.07	Discuss and describe the essential equipment to provide logistical support to MCI operations.
	58.08	Describe the role of critical incident stress management during and after MCIs.
	58.09	Demonstrate the use of local/regional triage tagging system.
59.0	<b>Air Medical:</b> Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response. –The student will be able to:	
	59.01	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
	59.02	Describe the capabilities, protocols, and methods for accessing air medical transport.
	59.03	Review the advantages and disadvantages of air medical transport.
	59.04	Review the conditions/situations in which air medical transport should be considered.
60.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:	
	60.01	Describe the role of the EMT in patient rescue and vehicle extrication
	60.02	Describe personal and patient safety during vehicle extrication.
	60.03	Explain the difference between simple access and complex access in vehicle extrication.



60.04	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
60.05	Discuss the use of simple hand tools used for vehicle extrication.
60.06	Discuss and describe the hazards and safe practices associated with the following vehicle components:
60.06.01	energy absorbing bumpers
60.06.02	air bag/supplemental restraint systems
60.06.03	catalytic converters and conventional fuel systems
60.06.04	stored energy
60.06.05	hybrid-electric vehicles
60.07	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles.
60.08	Describe the electrical hazards commonly found at highway incidents (above and below ground).
60.09	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
60.10	Explain typical door anatomy and methods to gain access to the patient.
61.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
61.01	Identify and describe resources for substance identification, decontamination, and treatment information, including but not limited to the following:
61.01.01	poison control center
61.01.02	medical control
61.01.03	material safety data sheets (MSDS),
61.01.04	reference textbooks
61.01.05	computer databases
61.01.06	Computer-Aided Management of Emergency Operations (CAMEO)
61.01.07	CHEMTREC
61.01.08	technical specialists
61.01.09	Agency for toxic substances and disease registry
61.02	Explain primary and secondary contamination risk.
61.03	Review routes of exposure.
61.04	Discuss how the substance and route of contamination alters triage and decontamination methods.
61.05	Explain the common signs, symptoms, and treatment for the following substances:
61.05.01	corrosives
61.05.02	pesticides
61.05.03	chemical asphyxiants
61.05.04	hydrocarbon solvents

61.06	Identify local facilities and resources capable of treating patients exposed to hazardous materials.
61.07	Determine the appropriate level of PPE by considering the following: 61.07.01 types 61.07.02 application 61.07.03 use and limitations 61.07.04 use of chemical compatibility chart
61.08	Explain specific decontamination procedures.
61.09	Discuss the designated HAZMAT control zones (HOT, WARM, and COLD).
61.10	Discuss an emergency two-step decontamination process.
61.11	Identify DOT Labels, placards and markings that are used to designate HAZMAT materials.
61.12	Demonstrate the ability to use a variety of reference materials to identify a HAZMAT material.
62.0	<b>Mass Casualty Incidents Due to Terrorism and Disaster:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
62.01	Describe the role of the EMT on the scene of a natural or man-made disaster.
62.02	Define the different types of terrorism and provide examples of incidents of each.
62.03	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.
62.04	Discuss the National Terrorism Advisory System.
62.05	Discuss factors to consider when responding to a terrorist situation.
62.06	Review important actions to take at the scene of a terrorist event such as: 62.06.01 scene safety 62.06.02 personal protection 62.06.03 notification procedures 62.06.04 available resources 62.06.05 working with in the command system
62.07	List and describe the main categories of weapons of mass destruction.
62.08	Discuss the different types of chemical agents and their signs and symptoms.
62.09	Review the treatment and management of patients exposed to various types of chemical agents and radiation.
62.10	Review the different types of radiations and their effect on the human body.
62.11	Discuss the use of a nerve agent antidote kit.

**Paramedic: Completion of intended outcomes 63-125 lead to the student's eligibility to sit for the licensure exam for Paramedic.**

63.0	<b>EMS Systems:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the History of EMS and a complex depth, comprehensive breadth of knowledge of EMS Systems. – The student will be able to:
63.01	Define terms, including but not limited to: EMS systems, licensure, registration, profession, professionalism, health care professional, ethics, peer review, medical direction, and protocols.
63.02	Describe the attributes of a paramedic as a health care professional.
63.03	Explain paramedic licensure/ certification, recertification, and reciprocity requirements in Florida.
63.04	Explain the importance of maintaining one's paramedic license/certification.
63.05	Describe the benefits of paramedic continuing education.
63.06	Discuss the role of national associations and of a national certification agency.
63.07	Discuss Chapter 401, Florida Statutes, and Chapter 64-E, Florida Administrative Code.
63.08	Discuss the roles of various EMS standard setting agencies.
63.09	Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration.
63.10	Describe and demonstrate professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
63.11	Describe the role of the EMS physician in providing medical direction.
63.12	Discuss examples of local protocols.
63.13	Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
63.14	Describe the role of the paramedic relative to the safety of the crew, the patient, and bystanders.
63.15	Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders.
63.16	Advocate the need for injury prevention.
63.17	Discuss the diverse types of EMS services and differences in their provision of care.
64.0	<b>Research:</b> Demonstrate a fundamental depth, foundational breath of knowledge of research principles to interpret literature and advocate evidence-based practice. – The student will be able to:
64.01	Interpret results and reach conclusions.

	64.02 Discuss the importance of evidenced based medicine and medical research and its role in refining EMS practices.
65.0	<b>Workforce Safety and Wellness:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of workforce safety and wellness. – The student will be able to:
	65.01 Discuss the concept of wellness and its benefits.
	65.02 Discuss how cardiovascular endurance, muscle strength, and flexibility contribute to physical fitness.
	65.03 Describe the impact of shift work on circadian rhythms.
	65.04 Discuss the role of risk assessments and warning signs in cancer and cardiovascular disease.
	65.05 Differentiate between proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
	65.06 Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.
	65.07 Describe the equipment available for self-protection when confronted with a variety of adverse situations.
	65.08 Describe the three phases and factors that trigger the stress response.
	65.09 Differentiate between normal/ healthy and detrimental reactions to anxiety and stress.
	65.10 Identify and describe the defense mechanisms and management techniques and resources commonly used to deal with stress.
	65.11 Describe the components of critical incident stress management (CISM).
	65.12 Describe the needs of the paramedic when dealing with death and dying.
	65.13 Discuss the importance of standard precautions and body substance isolation practices.
	65.14 Discuss the need to treat each patient as an individual, with respect and dignity.
	65.15 Discuss the need to respect the emotional needs of dying patients and their families.
	65.16 Discuss the paramedics' role in performing community risk assessment.
66.0	<b>Documentation:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the principles of medical documentation and report writing. –The student will be able to:
	66.01 Identify the general principles regarding the importance of EMS documentation and ways in which documents are used.
	66.02 Demonstrate proper use of medical terminology.
	66.03 Record pertinent administrative information to a given standard.
	66.04 Analyze the documentation for accuracy and completeness, including spelling.

66.05	Describe the differences between subjective and objective elements of documentation.
66.06	Describe the potential consequences of illegible, incomplete, or inaccurate documentation.
66.07	Describe the special considerations concerning patient refusal of transport.
66.08	Explain how to properly record direct patient or bystander comments.
66.09	Describe the special considerations concerning mass casualty incident documentation.
66.10	Identify and record the pertinent, reportable clinical data of each patient interaction.
66.11	Note and record pertinent negative clinical findings.
66.12	Demonstrate proper completion of an EMS PCR (patient care record).
67.0	<b>EMS Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of EMS communication system. – The student will be able to:
67.01	Identify the role of verbal, written, and electronic communications in the provision of EMS.
67.02	Describe the phases of communications necessary for an emergency response and transport.
67.03	Discuss the importance of proper terminology when communicating during an emergency.
67.04	Discuss factors that impede or enhance effective verbal and written communications.
67.05	Discuss the legal implications of written communications.
67.06	Identify the components of the local EMS communications system and describe their function and use.
67.07	Identify and differentiate among the following communications systems: simplex, multiplex, duplex, trunked, digital communications, and cellular telephone.
67.08	Describe the functions and responsibilities of the Federal Communications Commission.
67.09	Describe how emergency medical dispatch (EMD) functions as an integral part of the EMS system.
67.10	List appropriate information to be gathered by the telecommunicator.
67.11	Demonstrate an organized and concise radio transmission
67.12	Demonstrate an organized and concise patient report upon transfer of care.
68.0	<b>Therapeutic Communication:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the therapeutic communication principles. –The student will be able to:
68.01	Identify internal and external factors that affect a patient/ bystander interview conducted by a paramedic.

68.02	Review the strategies for developing patient rapport.
68.03	Summarize the methods to assess mental status based on interview techniques.
68.04	Discuss the strategies for interviewing difficult patients.
68.05	Summarize developmental considerations across the life span that influence patient interviewing.
68.06	Review unique interviewing techniques necessary to employ with patients who have special needs.
68.07	Discuss interviewing considerations used by paramedics in cross-cultural communications.
69.0	<b>Medical/Legal and Ethics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medical legal and ethical concepts related to EMS. – The student will be able to:
69.01	Differentiate between legal and ethical responsibilities.
69.02	Discuss State of Florida and Federal special reporting situations including:
69.02.01	abuse
69.02.02	sexual assault
69.02.03	gunshot and knife wounds
69.02.04	communicable disease
70.01.05	animal bites
69.03	Review terms, including but not limited to, the following: abandonment, battery, breach of duty, consent (expressed, implied, informed, voluntary), DNR orders, duty to act, emancipated minor, false imprisonment, liability, libel, negligence, proximate cause, scope of practice, slander, and tort.
69.04	Differentiate between the scope of practice and the standard of care for paramedic practice.
69.05	Discuss the concept of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the standard of care of a paramedic.
69.06	Review the four elements that must be present in order to prove negligence.
69.07	Review the legal concept and limitations of immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
69.08	Review the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
69.09	Review consent to include expressed, informed, implied, and involuntary.
69.10	Demonstrate appropriate patient management techniques in a refusal of care situation.
69.11	Discuss the issues of abandonment, negligence, false imprisonment, and battery and their implications to the paramedic.
69.12	Describe the actions that the paramedic should take to preserve evidence at a crime or accident scene.
69.13	Describe the importance of providing accurate communication (oral and written) in substantiating an incident.

69.14	Describe the criteria necessary to honor an advance directive in Florida.
70.0	<b>Anatomy and Physiology:</b> Integrate a complex depth, comprehensive breadth of knowledge of anatomy and physiology of all human systems. –The student will be able to:
70.01	Review the EMT standards and benchmarks for the anatomy & physiology.
70.02	Demonstrate comprehensive knowledge of anatomy and physiology as it applies to paramedic practice.
71.0	<b>Medical Terminology:</b> Integrate a comprehensive knowledge in the use of medical terminology and abbreviations into written and oral communication with health care professionals. –The student will be able to:
71.01	Review the EMT standards and benchmarks for medical terminology.
71.02	Demonstrate a comprehensive knowledge of medical terminology as it applies to paramedic practice.
72.0	<b>Pathophysiology:</b> Demonstrate a complex knowledge of pathophysiology of major systems. – The student will be able to:
72.01	Describe the factors that precipitate disease in the human body including familial diseases and risk factors.
72.02	Describe environmental risk factors.
72.03	Define and discuss the pathogenesis, signs, and symptoms of distributive, obstructive, neurogenic, anaphylactic, and septic shock.
72.04	Discuss multiple organ dysfunction syndrome (MODS).
72.05	Describe alterations in cells and tissues including cellular adaptation, cellular injury, manifestation of cellular injury, and cellular death/necrosis.
72.06	Describe genetics and familial diseases and the role they play in pathophysiology.
72.07	Describe the self –defense mechanisms of inflammation and immune responses and their relationships to pathophysiology.
73.0	<b>Life Span Development:</b> Integrate the knowledge of the physiological, psychological, and sociological changes throughout human development. –The student will be able to:
73.01	Compare, contrast, and analyze the physiological and psychosocial characteristics across the life span.
74.0	<b>Public Health:</b> Demonstrate a fundamental knowledge of principles of public health. – The student will be able to:
74.01	Review the EMT standards and benchmarks for the public health.
74.02	Apply a fundamental knowledge of the principles of public health, epidemiology, health promotion, and illness and injury prevention.
75.0	<b>Principles of Pharmacology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in the principles of pharmacology. –The student will be able to:
75.01	Differentiate among the chemical, generic (nonproprietary), and trade (proprietary) names of a drug.
75.02	List the four main sources of drug products.

75.03	Describe how drugs are classified.
75.04	List legislative acts controlling drug use and abuse in the United States.
75.05	Differentiate among Schedule I, II, III, IV, and V substances.
75.06	Use reference materials to research medications.
75.07	Discuss standardization of drugs.
75.08	Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
75.09	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
75.10	List and describe available drug forms.
75.11	List and differentiate all methods and routes of medication administration covered in the current National EMS Scope of Practice Model.
75.12	Describe the process of: <ul style="list-style-type: none"> <li>75.12.01 pharmacokinetics</li> <li>75.12.02 pharmacodynamics</li> <li>75.12.03 theories of drug action</li> <li>75.12.04 drug-response relationship</li> <li>75.12.05 factors altering drug responses</li> <li>75.12.06 predictable drug responses</li> <li>75.12.07 iatrogenic drug responses</li> <li>75.12.08 unpredictable adverse drug responses</li> </ul>
75.13	Discuss the prevention, recognition and management of adverse medication reactions.
75.14	Select the optimal medication and method of medication administration for patients with a particular clinical condition or situation.
76.0	<b>Medication Administration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of medication administration within the scope of practice of the paramedic. –The student will be able to:
76.01	Review the specific anatomy and physiology pertinent to medication administration.
76.02	Discuss the paramedic's responsibilities and scope of practice pertinent to the administration of medications.
76.03	Review mathematical principles and demonstrate equations necessary for performing drug calculations.
76.04	Describe the indications, contraindications, procedure, equipment and risks associated with peripheral intravenous or external jugular access.
76.05	Describe the indications, equipment needed, technique used, precautions, and general principles of intraosseous needle placement and infusion.



76.06	Describe complications that can occur as a result of IV therapy.
76.07	Review the "six rights" of drug administration and correlate these with the principles of medication administration.
76.08	Describe the use of standard precautions and body substance isolation (BSI) procedures when administering a medication.
76.09	Prepare medications for administration from a variety of types of packaging, including vials, non-constituted vials, ampules, prefilled syringes, and packaging for intravenous solutions.
76.10	Describe the role of medical direction in medication administration and describe the difference between direct orders (online) and standing orders (off-line).
76.11	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the following routes: 76.11.01      inhalation route 76.11.02      gastric tube 76.11.03      rectal route
76.12	Differentiate among the different percutaneous routes of medication administration.
76.13	Describe the purpose, equipment needed, techniques used, complications, and general principles for obtaining a blood sample.
76.14	Obtain venous and capillary blood for testing and discuss blood chemistry and normal values.
76.15	Demonstrate principles of medical asepsis in the administration of medications.
76.16	Demonstrate the procedure for disposal of contaminated items and supplies.
76.17	Demonstrate cannulation of peripheral, intravenous and/or external jugular veins.
76.18	Demonstrate intraosseous access.
76.19	Demonstrate administration of medications by the following routes: 76.19.01      oral 76.19.02      sublingual 76.19.03      buccal 76.19.04      auto-injector 76.19.05      inhalation route 76.19.06      intranasal route. 76.19.07      subcutaneous route. 76.19.08      intramuscular route. 76.19.09      intravenous route. 76.19.10      intraosseous route.
77.0	<b>Emergency Medications:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of emergency medications within the scope of practice for the paramedic. – The student will be able to:

77.01	Discuss medications used by the paramedic, including indications, contraindications, dosages, adverse reactions, side effects, and interactions for the following:
77.01.01	Airway management
77.01.02	Respiratory
77.01.03	Cardiovascular
77.01.04	Neurologic conditions
77.01.05	Gastrointestinal
77.01.06	Miscellaneous medications
78.0	<b>Airway Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of airway management within the scope of practice of the paramedic across the life span. –The student will be able to:
78.01	Explain the primary objective of airway maintenance.
78.02	Explain the differences in airway anatomy.
78.03	Define, identify and describe a tracheostomy, laryngectomy, stoma, and tracheostomy tube.
78.04	Describe the special considerations in airway management and ventilation for the pediatric patient.
78.05	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade.
78.06	Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.
78.07	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation.
78.08	Describe the indications, contraindications, advantages, disadvantages and complications for performing cricothyrotomy.
78.09	Demonstrate the procedure for percutaneous cricothyrotomy.
78.10	Review the function of the structures located in the upper and lower airway.
78.11	Demonstrate effective techniques of advanced airway management of the following:
78.11.01	orotracheal,
78.11.02	nasotracheal,
78.11.03	subglottic,
78.11.04	supraglottic,
79.22.05	digital intubation
78.12	Describe and demonstrate methods of assessment for confirming correct placement of any airway device.
78.13	Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation.
79.0	<b>Respiration:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of respiration within the scope of practice of the paramedic across the life span. –The student will be able to:
79.01	List the concentration of gases that comprise atmospheric air.

79.02	Describe the measurement of oxygen in the blood.
79.03	Describe the measurement of carbon dioxide in the blood.
79.04	Describe peak expiratory flow.
79.05	Describe factors that cause decreased oxygen concentrations in the blood.
79.06	Describe the factors that increase and decrease carbon dioxide production in the body.
79.07	Define pulsus paradoxus.
79.08	Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
79.09	Review the physiology of ventilation and respiration.
80.0	<b>Ventilation:</b> Demonstrate a complex breadth, comprehensive breadth of knowledge of ventilatory assessment and management across the life span. –The student will be able to:
80.01	Perform and interpret pulse oximetry and capnography.
80.02	Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV), BIPAP/CPAP, AND PEEP devices.
81.0	<b>Scene Size-Up:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of scene management. –The student will be able to:
81.01	Describe common hazards found at the scene of a trauma and a medical patient.
81.02	Discuss common mechanisms of injury/ nature of illness.
81.03	Explain the rationale for crew members to evaluate scene safety prior to entering.
81.04	Demonstrate the scene-size-up.
82.0	<b>Primary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the primary assessment for all patient situations. –The student will be able to:
82.01	Summarize the elements of a general impression of the patient.
82.02	Explain the reason for performing a primary assessment.
82.03	Discuss and demonstrate methods of assessing levels of responsiveness using AVPU.
82.04	Discuss and demonstrate methods of assessing the airway across the life span.
82.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
82.06	Differentiate between a patient with adequate and inadequate breathing.

82.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
82.08	Discuss and demonstrate assessing the patient for external bleeding.
82.09	Describe and demonstrate the assessment and interruption of skin color, temperature, moisture, and capillary refill across the life span.
82.10	Explain the reasons for prioritizing a patient for care and transport.
82.11	Describe when it is appropriate to expose the patient completely.
82.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
83.0	<b>History Taking:</b> Demonstrate a complex depth, comprehensive breath of knowledge of the components of history taking. –The student will be able to:
83.01	Determine and investigate the chief complaint.
83.02	Describe the components of the patient history.
83.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
83.04	Acknowledge the feelings patients experience during assessment.
83.05	Discuss the value of obtaining a family and social history.
83.06	Describe examples of different techniques the paramedic may use to obtain information from patients, family, or bystanders during the history taking process.
84.0	<b>Secondary Assessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of techniques used for a secondary assessment across the life span. –The student will be able to:
84.01	Review EMT standards and benchmarks for secondary assessment.
84.02	Describe the techniques of inspection, palpation, percussion, and auscultation.
84.03	Discuss the limitations of conducting a physical exam in the out-of-hospital environment.
84.04	Demonstrate the examination of the patient including all major body systems and anatomical regions.
84.05	Distinguish the importance of abnormal assessment findings in all the major body systems and anatomical regions.
84.06	Describe the evaluation of patient’s perfusion status based on findings in the initial assessment.
84.07	State the reasons for performing a rapid trauma assessment.
84.08	Discuss the reason for performing a focused history and physical exam.
84.09	Discuss appropriate gender and cultural considerations regarding assessment.

84.10	Discuss medical identification devices/ systems.
85.0	<b>Monitoring Devices:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of monitoring devices within the scope of practice of the paramedic. –The student will be able to:
85.01	Describe the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies, including but not limited to:
85.01.01	continuous ECG monitoring
85.01.02	12-Lead ECG
85.01.03	capnography (wave form)
85.01.04	co-oximetry
85.01.05	methemoglobin monitoring
85.01.06	total hemoglobin
85.01.07	basic blood chemistry
85.01.08	ultrasound
85.01.09	other devices identified at the EMT level
85.02	Demonstrate the use of the following patient monitoring technologies, including but not limited to:
85.02.01	continuous ECG monitoring
85.02.02	12-Lead ECG
85.02.03	capnography (wave form)
85.02.04	other devices identified at the EMT level
86.0	<b>Reassessment:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of how and when to perform a reassessment for all patient situations. –The student will be able to:
86.01	Describe the components of reassessment and demonstrate the skills involved.
86.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
86.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
86.04	Demonstrate reassessment of patients across the life span.
87.0	<b>Medical Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of medical complaints. –The student will be able to:
87.01	Identify factors that complicate patient assessment including:
87.01.01	scene safety
87.01.02	environmental factors
87.01.03	chief complaint
87.01.04	paramedic preconceptions
87.01.05	distracting injuries
87.01.06	tunnel vision
87.01.07	patient cooperation
87.01.08	paramedic attitude
87.02	Discuss forming a field impression and utilizing available information to determine a different diagnosis.

88.0	<b>Neurology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of neurologic disorders/emergencies across the life span. – The student will be able to:
88.01	Identify the risk factors associated with nervous system dysfunction.
88.02	Review the anatomy and physiology of the organs and structures related to nervous system.
88.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with the following neurological conditions, including but not limited to:
88.03.01	coma
88.03.02	altered mental status
88.03.03	seizures
88.03.04	syncope
88.03.05	transient ischemic attack
88.03.06	stroke and intracranial hemorrhage
88.03.07	degenerative neurologic diseases
88.03.08	chronic alcoholism
88.03.09	back disorders
88.04	Describe and differentiate the major types of seizures.
88.05	Describe the types of stroke.
88.06	Describe the significance of the prevalence of neurologic disorders in the United States.
88.07	Discuss screen tools for assessment of stroke and large vessel occlusion.
88.08	Demonstrate the use of stroke screening tools and appropriate decision making regarding transport destination for a stroke patient.
89.0	<b>Abdominal and Gastrointestinal Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
89.01	Review the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
89.02	Differentiate between hemorrhagic and non-hemorrhagic causes of abdominal pain.
89.03	Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.

89.04	Discuss the pathophysiology, signs, and symptoms, and demonstrate the assessment, and management of patients with the following abdominal and gastrointestinal disorders, including but not limited to:
89.04.01	both upper and lower gastrointestinal bleeding
89.04.02	acute gastroenteritis.
89.04.03	colitis.
89.04.04	diverticulitis.
89.04.05	appendicitis.
89.04.06	peptic ulcer disease.
89.04.07	bowel obstruction.
89.04.08	Crohn's disease.
89.04.09	pancreatitis.
89.04.10	esophageal varices.
89.04.11	hemorrhoids.
89.04.12	cholecystitis.
89.04.13	acute hepatitis.
89.05	Identify patients at risk for gastrointestinal emergencies.
89.06	Demonstrate how to auscultate the abdomen to assess for diminished, absent or abnormal bowel sounds.
90.0	<b>Immunology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of immunology disorders/emergencies across the life span. – The student will be able to:
90.01	Define and differentiate:
90.01.01	allergic reaction.
90.01.02	anaphylaxis
90.01.03	antigens
90.01.04	antibodies
90.01.05	anaphylactoid reaction
90.02	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
90.03	Describe the prevention of anaphylaxis and appropriate patient education.
90.04	Review the pathophysiology of allergy and anaphylaxis.
90.05	Describe the common methods of entry of allergens into the body.
90.06	Review common antigens most frequently associated with anaphylaxis.
90.07	Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis and allergic reaction.
91.0	<b>Infectious Diseases:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of assessment and management of a patient who may have an infectious disease across the life span – The student will be able to:
91.01	Review EMT standards and benchmarks for infectious disease.

91.02	Review the specific anatomy and physiology pertinent to infectious and communicable diseases.
91.03	Describe the steps of an infectious process.
91.04	Describe and differentiate infectious agents, including bacteria, viruses, fungi, protozoans, and helminths (worms).
91.05	Review characteristics of the immune system.
91.06	Perform an assessment of a patient with an infectious/communicable disease.
91.07	Effectively and safely manage a patient with an infectious/communicable disease.
91.08	Review public health principles related to infectious disease.
91.09	Review the roles of local, state, and federal agencies involved in infectious disease surveillance and outbreaks.
91.10	Describe the interactions of the agent, host, and environment as determining factors in disease transmission.
91.11	Describes the EMS professional's responsibilities as well as their rights under the Ryan White Act.
91.12	Discuss the pathophysiology, signs, symptoms, assessment, and management and risk factors of significant health concerns.
91.13	Discuss the characteristics of, and organisms associated with, febrile and afebrile respiratory disease.
91.14	Describe the EMS provider's role in patient education and preventing disease transmission.
91.15	Review the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS).
92.0	<b>Endocrine Disorders:</b> Demonstrate a complex depth, comprehensive breadth of knowledge in endocrine disorders/emergencies across the life span. – The student will be able to:
92.01	Identify the risk factors related to disorders of the endocrine system.
92.02	Review the anatomy and physiology of organs and structures related to endocrinologic diseases.
92.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following endocrinologic emergencies:
92.03.01	hypoglycemia
92.03.02	hyperglycemia
92.03.03	diabetic ketoacidosis
92.03.04	Cushing's syndrome
92.03.05	adrenal insufficiency
92.03.06	pituitary disorders
92.03.07	thyroid disorders
93.0	<b>Psychiatric:</b> Demonstrate a complex depth, comprehensive breadth of knowledge regarding the assessment and management of psychiatric disorders/emergencies across the life span. – The student will be able to:



93.01	Differentiate among behavior, psychiatric disorders, and behavioral emergencies.
93.02	Discuss the pathophysiology of common psychiatric disorders and behavioral emergencies.
93.03	Discuss the general factors that may cause an alteration in a patient's behavior.
93.04	Discuss the factors/signs or symptoms of various psychiatric emergencies to include suicide.
93.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
93.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
93.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
93.08	Describe the special considerations for the safety of the EMS provider, and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
93.09	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
93.10	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency and possible legal implication.
93.11	List the risk factors (including behaviors) for suicide.
94.0	<b>Cardiovascular:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of cardiovascular disorders/emergencies across the life span. – The student will be able to:
94.01	Describe the epidemiology, incidence, morbidity and mortality of cardiovascular disease.
94.02	Identify the risk factors of coronary artery disease.
94.03	Review the anatomy and physiology of the heart and circulatory system.
94.04	Discuss the electrophysiology of the heart.
94.05	Discuss and demonstrate ECG monitoring, 12 Lead placement, acquisition, and interpretation.
94.06	Define and give examples of positive and negative inotropes, chronotropes and dromotropes.
94.07	Identify the normal characteristics of the point of maximal impulse (PMI).
94.08	Discuss the normal and abnormal heart sounds and how they relate to hemodynamic events in the cardiac cycle.
94.09	Describe a systematic approach to the analysis and interpretation of cardiac dysrhythmias.
94.10	Describe the conditions of pulseless electrical activity.
94.11	Compare and contrast electrotherapy to include pacing.

94.12	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients following conditions including the development of a treatment plan, including but not limited to:
94.12.01	angina
94.12.02	myocardial infarction STEMI/Non-STEMI
94.12.03	congestive heart failure
94.12.04	cardiac tamponade
94.12.05	cardiogenic shock
94.12.06	hypertension and acute hypertensive states
94.12.07	cardiac arrest
94.12.08	vascular disorders
94.12.09	hypertrophic cardiomyopathies
94.12.10	infectious diseases of the heart
94.12.11	congenital abnormalities
94.13	List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.
94.14	Compare fibrinolysis from percutaneous intervention as reperfusion techniques used in patients with AMI or suspected AMI and describe the "window of opportunity" as it pertains to reperfusion of a myocardial infarction.
94.15	List the characteristics of a patient eligible for thrombolytic therapy.
94.16	Define the term acute pulmonary edema and describe its relationship to left ventricular failure.
94.17	Discuss preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.
94.18	Identify non-cardiac causes of cardiac arrest.
94.19	Discuss the components of post resuscitation care including how to determine the return of spontaneous circulation (ROSC).
94.20	Identify circumstances and situations where resuscitation efforts would not be initiated or would be terminated.
94.21	Demonstrate satisfactory performance of psychomotor skills of basic and advanced life support techniques according to the current American Heart Association guidelines or its equivalent, including:
94.21.01	cardiopulmonary resuscitation
94.21.02	defibrillation
94.21.03	synchronized cardioversion
94.21.04	transcutaneous pacing
95.0	<b>Toxicology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of toxicology emergencies across the life span. – The student will be able to:
95.01	Define and differentiate among toxicology, poisoning, and overdose.

95.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
95.02.01	food poisoning
95.02.02	carbon monoxide poisoning
95.02.03	cyanide poisoning
95.02.04	exposure to acid or alkaline substance
95.02.05	exposure to hydrocarbons
95.02.06	methanol ingestion
95.02.07	isopropanol ingestion
95.02.08	ethylene glycol ingestion
95.02.09	exposure to poisonous substances
95.02.10	drug withdrawal
95.02.11	alcoholic syndrome
95.02.12	withdrawal syndrome (including delirium tremens)
95.02.13	illicit drug use
95.02.14	Medication overdose
95.02.15	Opioid overdose
95.02.16	Organa phosphate overdose
95.03	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
95.04	Review various ways that toxins enter the body.
95.05	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
95.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
95.07	Review the following for Narcan (naloxone):
95.07.01	generic and trade names
95.07.02	medication forms
95.07.03	dose
95.07.04	administration
95.07.05	contraindications
96.0	<b>Respiratory:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span. – The student will be able to:
96.01	Discuss the epidemiology, morbidity, and mortality of respiratory illness in the United States.
96.02	Review hypoventilation and hyperventilation, and outline the conditions with which they are often associated.
96.03	Review the anatomy, physiology and functions of the respiratory system.
96.04	Discuss those factors that contribute to the formation of a general impression and degree of respiratory distress.
96.05	Identify breathing patterns that are associated with respiratory distress and neurologic insults and their correlation with the signs of increased work of breathing.

96.06	Review between normal and abnormal breath/lung sounds and its physiologic significance.
96.07	Explain the concepts of hypoxic drive and auto-PEEP as they relate to the COPD patient.
96.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following respiratory conditions, including but not limited to:
96.08.01	pulmonary infections (upper and lower airway)
96.08.02	atelectasis
96.08.03	anatomic or foreign body obstruction
96.08.04	aspiration
96.08.05	asthma
96.08.06	emphysema
96.08.07	chronic bronchitis
96.08.08	spontaneous pneumothorax
96.08.09	pleural effusion
96.08.10	pulmonary embolism
96.08.11	cancer
96.08.12	toxic inhalations
96.08.13	pulmonary edema
96.08.14	acute respiratory distress syndrome (ARDS)
96.08.15	pneumonia
96.08.16	neoplasms of the lung
96.08.17	hyperventilation syndrome
97.0	<b>Hematology:</b> Demonstrate a complex depth, foundational breadth of knowledge of the assessment, and management of hematology disorders/emergencies across the life span – The student will be able to:
97.01	Identify the role of heredity in the risk for hematologic disorders.
97.02	Review the anatomy and physiology of the hematopoietic system.
97.03	Describe volume and volume-control related to the hematopoietic system.
97.04	Explain the significance of the hematocrit with respect to red cell size and number.
97.05	Explain the correlation of the RBC count, hematocrit and hemoglobin values.
97.06	Recognize medications used to decrease the risk of thrombosis.
97.07	Identify blood groups.

97.08	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with the following conditions, including but not limited to:
97.08.01	anemia
97.08.02	leukemia
97.08.03	lymphomas
97.08.04	polycythemia
97.08.05	disseminated intravascular coagulopathy
97.08.06	hemophilia
97.08.07	sickle cell disease
97.08.08	multiple myeloma
97.08.09	leukopenia/neutropenia
97.08.10	leukocytosis
97.08.11	thrombocytosis
97.08.12	thrombocytopenia
97.08.13	transfusion complications
98.0	<b>Genitourinary/Renal:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of genitourinary and renal emergencies across the life span. – The student will be able to:
98.01	Describe the epidemiology, incidence, morbidity, mortality, and risk factors of urological emergencies.
98.02	Review the anatomy and physiology of the organs and structures related to urogenital diseases.
98.03	Discuss referred pain and visceral pain as it relates to urology.
98.04	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients of the following urologic and renal conditions, including but not limited to:
98.04.01	acute renal failure
98.04.02	chronic renal failure
98.04.03	complications related to hemodialysis and peritoneal dialysis.
98.04.04	renal calculi
98.04.05	priapism
98.04.06	testicular torsion
98.04.07	urinary tract infection
98.05	Review fluids, electrolytes, and acid based disturbances.
99.0	<b>Gynecology:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the assessment findings and the management of gynecology disorders/emergencies across the life span. – The student will be able to:
99.01	Review anatomy and physiology of the female reproductive system.
99.02	Identify the normal events of the menstrual and ovarian cycle.

99.03	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment, and management of patients with specific gynecological emergencies, including but not limited to:
99.03.01	Infection (including Pelvic inflammatory disease, Bartholin's abscess, and vaginitis/ vulvovaginitis)
99.03.02	ovarian cyst and ruptured ovarian cyst
99.03.03	ovarian torsion
99.03.04	endometriosis
99.03.05	dysfunctional uterine bleeding
99.03.06	prolapsed uterus
99.03.07	vaginal foreign body
99.03.08	vaginal Hemorrhage
99.04	Describe the importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
99.05	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
100.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundation breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:
100.01	Review the anatomy and physiology of the musculoskeletal system
100.02	Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with musculoskeletal emergencies, including but not limited to:
100.02.01	osteomyelitis and tumors
100.02.02	disc disorders, lower back pain (cauda equine syndrome, sprain, and strain.)
100.02.03	joint abnormalities
100.02.04	muscle abnormalities
100.02.05	overuse syndrome
100.02.06	soft tissue infections
101.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of common or major diseases of the eyes, ears, nose and throat across the life span. – The student will be able to:
101.01	Review the anatomy and physiology of the eyes, ears, nose, and throat.

<p>101.02 Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various eye diseases/injuries, including but not limited to:</p> <ul style="list-style-type: none"> <li>101.02.01 burns of eye and adnexa</li> <li>101.02.02 conjunctivitis</li> <li>101.02.03 corneal abrasions</li> <li>101.02.04 foreign body</li> <li>101.02.05 inflammation of the eyelid</li> <li>101.02.06 glaucoma</li> <li>101.02.07 hyphemia</li> <li>101.02.08 iritis</li> <li>101.02.09 papilledema</li> <li>101.02.10 retinal detachment and defect</li> <li>101.02.11 cellulitis of orbit</li> </ul>
<p>101.03 Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various ear diseases/injuries including:</p> <ul style="list-style-type: none"> <li>101.03.01 foreign body</li> <li>101.03.02 impacted cerumen</li> <li>101.03.03 labyrinthitis</li> <li>101.03.04 Meniere's disease</li> <li>101.03.05 otitis external and media</li> <li>101.03.06 perforated tympanic membrane</li> </ul>
<p>101.04 Discuss the pathophysiology, signs, and symptoms and demonstrate the assessment and management of patients with various nose diseases/injuries including:</p> <ul style="list-style-type: none"> <li>101.04.01 epistaxis</li> <li>101.04.02 foreign body intrusion</li> <li>101.04.03 rhinitis</li> <li>101.04.04 sinusitis</li> </ul>
<p>101.05 Discuss the pathophysiology, signs and symptoms and demonstrate the assessment and management of patients with oropharynx/throat diseases/injuries including:</p> <ul style="list-style-type: none"> <li>101.05.01 dentalgia and dental abscess</li> <li>101.05.02 diseases of oral soft tissue/ Ludwig's angina</li> <li>101.05.03 foreign body intrusion</li> <li>101.05.04 epiglottitis</li> <li>101.05.05 laryngitis</li> <li>101.05.06 tracheitis</li> <li>101.05.07 oral candidiasis</li> <li>101.05.08 peritonsillar abscess</li> <li>101.05.09 pharyngitis/tonsillitis</li> <li>101.05.10 temporomandibular joint disorders</li> </ul>
<p>102.0 <b>Shock and Resuscitation:</b> Demonstrate the integration of a comprehensive knowledge of causes and pathophysiology into the management of shock and respiratory failure. – The student will be able to:</p>

102.01 Describe the epidemiology, including: premorbid and comorbid conditions and prevention strategies, for shock and hemorrhage.
102.02 Review the anatomy and physiology of the cardiovascular and respiratory systems.
102.03 Contrast the physiology of blood flow during normal states, peri-arrest, cardiac arrest and shock.
102.04 Discuss and demonstrate the assessment and management of shock.
102.05 Review the management of external hemorrhage.
102.06 Discuss appropriate fluid resuscitation.
102.07 Review the following for the cardiac arrest victim: 102.07.01 epidemiology 102.07.02 pathophysiology 102.07.03 physiology of blood flow during external chest compressions 102.07.04 resuscitation success/research
102.08 Review defibrillation and cardioversion to include manual techniques, automatic and semi-automated devices.
102.09 Discuss causes, pathophysiology, signs, and symptoms and management of special arrest and peri-arrest conditions, including but not limited to: 102.09.01 electrolyte disorders 102.09.02 toxic exposures 102.09.03 drowning 102.09.04 hypothermia 102.09.05 near-Fatal Asthma 102.09.06 anaphylaxis 102.09.07 trauma 102.09.08 pregnancy 102.09.09 electrical shock and lightning strikes
102.10 Review post resuscitative care include, temperature regulation, glucose/electrolyte management.
102.11 Discuss and demonstrate the assessment and management of internal hemorrhage.
102.12 Review the stages and classifications of hemorrhage.
102.13 Review the pathophysiology and demonstrate the assessment and management of the different types of shock.
102.14 Describe the effects of decreased perfusion at the capillary level.
102.15 Relate pulse pressure changes to perfusion status.
102.16 Relate orthostatic vital sign changes to perfusion status.



102.17	Define and differentiate between compensated and decompensated shock for all types of shock.
102.18	Discuss and differentiate the physiological manifestations of shock across the life span.
103.0	<b>Trauma Overview:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span. – The student will be able to:
103.01	Review the pathophysiology of the trauma patient.
103.02	Review the components of comprehensive trauma systems and levels of trauma centers.
103.03	Review the considerations for different transportation modes to a trauma center.
103.04	Discuss the kinematics of blunt and penetrating trauma.
103.05	Discuss and describe significant and non-significant mechanism of injury (MOI) and provide examples of each.
103.06	Discuss and demonstrate the application of State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code.
103.07	Review the National Trauma Triage Protocol of Injured Patients.
103.08	Review forming a field impression and utilizing available information to determine a differential diagnosis.
103.09	Review the need for rapid intervention transport of the trauma patient.
104.0	<b>Bleeding:</b> Demonstrate a complex depth, comprehension breadth of knowledge of pathophysiology, assessment and management of bleeding across the life span. – The student will be able to:
104.01	Review the compensatory mechanism in hemorrhagic shock.
104.02	Review the administration of medications to assist in the maintenance of homeostasis.
104.03	Review the maintenance of tissue oxygenation in a bleeding patient.
104.04	Discuss appropriate fluid resuscitation for the patient in hemorrhagic shock.
104.05	Review the different methods/modalities of controlling bleeding.
105.0	<b>Chest Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span. – The student will be able to:
105.01	Review the anatomy and physiology of the organs and structures related to thoracic injuries.

105.02	Review the pathophysiology, signs and symptoms and mechanism of injury (MOI) of the following injuries, including but not limited to:
105.02.01	myocardial injuries
105.02.01.1	pericardial tamponade
105.02.01.2	myocardial contusion
105.02.01.3	myocardial rupture
105.02.02	vascular injury
105.02.02.1.1	aortic dissection
105.02.02.1.2	pulmonary contusion
105.02.03	hemothorax
105.02.04	pneumothorax
105.02.05	hemopneumothorax
105.02.06	cardiac Tamponade
105.02.07	commotio cordis
105.02.08	tracheobronchial disruption
105.02.09	diaphragmatic rupture and injury
105.02.10	traumatic asphyxia
105.02.11	rib fracture
105.02.12	flail segment
105.02.13	sternal fracture
105.02.14	vascular injuries
105.02.15	impaled objects
105.02.16	evisceration/shock
105.03	Discuss monitoring of chest tubes.
105.04	Demonstrate the following techniques of management for thoracic injuries: needle decompression, elective intubation, ECG monitoring, oxygenation, and ventilation
106.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span. – The student will be able to:
106.01	Review the anatomy and physiology of organs and structures related to abdominal injuries.
106.02	Describe the mechanism of injury for and types of open and closed abdominal and retroperitoneal injuries involving seat belts, penetrating, blunt and evisceration.
106.03	Describe and demonstrate the pathophysiology, signs and symptoms and the assessment and management for, including but not limited to:
106.03.01	pelvic fractures.
106.03.02	solid organ injuries
106.03.03	hollow organ injuries
106.03.04	abdominal vascular injuries
106.03.05	retroperitoneal space (kidneys)
106.03.06	genitourinary system

106.04	Review the psychological considerations associated with genitourinary injuries.
107.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:
107.01	Review the anatomy and physiology of the musculoskeletal system, include the healing process.
107.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.
107.03	Define the different types of orthopedic trauma including fracture classifications.
107.04	List the 6 “P” orthopedic injury assessment.
107.05	Discuss the following management techniques:
107.05.01	heat therapy
107.05.02	cold therapy
107.05.03	splinting
107.06	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma including medication administration (analgesics and anxiolytics).
107.07	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.
107.08	Review age-associated changes in bones.
107.09	Define luxation and subluxation.
107.10	Explain the rationale for splinting at the scene versus load and go.
107.11	Demonstrate the proper use various splinting materials and devices to include improvised and traction splints.
107.12	Discuss and demonstrate the assessment and management of compartment and crush syndrome:
107.12.01	destination decision
107.12.02	rhabdomyolysis
107.13	Discuss the pathophysiology, and demonstrate the assessment and management of a tendon injury to the knee (patellar), shoulder and Achilles.
107.14	Discuss the proper procedure to package an amputated body part for replantation
108.0	<b>Soft Tissue Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
108.01	Review anatomy and physiology and identify the major functions of the integumentary system.

108.02 Discuss the pathophysiology of soft tissue injuries and the healing process including:
108.02.01 Inflammation
108.02.02 Epithelialization
108.02.03 Neovascularization
108.02.04 Collagen Synthesis
108.02.05 Alterations in wound healing
108.02.06 Abnormal scar formation
108.03 Describe and demonstrate the assessment and management of various soft tissue injuries.
108.04 Identify types of burn injuries including:
108.04.01 thermal burn
108.04.02 chemical burn
108.04.03 electrical burn
108.04.04 radiation burn
108.05 Describe the depth classification of burn injuries including:
108.05.01 superficial burn
108.05.02 partial-thickness burn
108.05.03 full-thickness burn
108.05.04 other depth classification
108.06 Describe and demonstrate methods for determining body surface area percentage of a burn injury including the “rule of nines”, the “rule of palms”, and other methods.
108.07 Explain how the seriousness of a burn is related to its depth and percentage of body surface area (BSA) involved.
108.08 Review the various management techniques for hemorrhage control.
108.09 Differentiate among the types of injuries requiring the use of occlusive versus non-occlusive dressing.
108.10 Demonstrate the proper use of any Morgan□type lens for irrigation of the eye.
108.11 Demonstrate the assessment and management of specific burn injuries including:
108.11.01 thermal
108.11.02 inhalation
108.11.03 chemical
108.11.04 electrical
108.11.05 radiation
108.12 Describe the pathophysiologic complications and systemic complications of a burn injury.
108.13 Discuss comorbidities in burn patients.
108.14 Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management.
108.15 Describe the types of chemicals and their burning processes and a chemical burn injury to the eye.

108.16 Discuss appropriate fluid resuscitation for burn patients.
<b>109.0 Head, Face, Neck, and Spine:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of head, face, neck, and spine trauma across the life span. – The student will be able to:
109.01 Discuss types of and potential complications of facial injuries.
109.02 Discuss pathophysiology, signs and symptoms, assessment and management, and a field impression for injuries to the following areas: 109.02.01 eye(s) 109.02.02 nose 109.02.03 throat/neck 109.02.04 face 109.02.05 mouth 109.02.06 ear(s)
109.03 Distinguish between an open and closed head injury.
109.04 Define and explain the process involved with increasing ICP.
109.05 Describe and demonstrate the assessment and general management of the head/ brain injury patient, including pharmacological and non-pharmacological treatment.
109.06 Discuss the pathophysiology, signs and symptoms, and assessment and management for a patient for each of the following conditions: 109.06.01 skull fracture 109.06.02 cerebral contusion 109.06.03 intracranial hemorrhage 109.06.04 epidural, subdural, intracerebral, and subarachnoid 109.06.05 perforated tympanic membranes 109.06.06 orbital fracture 109.06.07 mandibular fracture
109.07 Review various methods for stabilization and removal of a helmet.
<b>110.0 Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of nervous system trauma across the life span. . – The student will be able to:
110.01 Review the anatomy and physiology of the central nervous system, brain, spinal cord, skull and spinal column.

110.02	Discuss pathophysiology, signs and symptoms, assessment, and management of the following nervous system injury including:
110.02.01	Cauda Equine syndrome
110.02.02	peripheral nerve injuries
110.02.03	intracerebral hemorrhage
110.02.04	cranial fractures
110.02.05	brain tissue injuries
110.02.06	spinal cord injuries
110.02.07	Brown-Sequard Syndrome
110.02.08	anterior cord syndrome
110.02.09	central cord syndrome
110.02.10	spinal shock
110.03	Discuss the mechanism of injury which would result in a nervous system injury.
110.04	Review the rationale for and potential for motion restriction for the entire spine when a cervical spine injury is suspected
110.05	Discuss the research involving the management of nervous system injuries and patient management.
111.0	<b>Special Considerations in Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of special considerations in trauma across the life span. – The student will be able to:
111.01	Integrate the assessment and management differences associated with the following special populations:
111.01.01	pregnancy
111.01.02	pediatric
111.01.03	geriatric
112.0	<b>Environmental Emergencies:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of environmental emergencies across the life span. – The student will be able to:
112.01	Discuss the pathophysiology, signs and symptoms, assessment and management and MOI of the following:
112.01.01	drowning and water related incidents
112.01.02	temperature-related illness
112.01.03	bites and envenomation
112.01.04	diving injuries
112.01.05	lightning (electrical) injury
112.01.06	high altitude illness
112.02	Identify environmental factors that may cause illness, exacerbate preexisting illness and complicate treatment or transport decisions.
112.03	Review several methods of temperature monitoring.
112.04	Describe the general process of thermal regulation, including substances used and wastes generated.
112.05	Define fever and discuss its pathophysiologic mechanism.
112.06	Discuss the role of fluid therapy in the treatment of temperature related emergencies.

112.07	Review the gas laws related to the pathophysiology of injury in a submersion emergency.
112.08	Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving related illnesses.
112.09	Differentiate among the various treatments and interventions for the management of diving accidents.
112.10	Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.
113.0	<b>Multi-Systems Trauma:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of multi-system trauma and blast injuries. – The student will be able to:
113.01	Review the priority of care in the multisystem trauma patient
113.02	Explain which ALS interventions should occur prior to a transport decision and during transport
114.0	<b>Obstetrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the obstetric patient within the scope of practice of the paramedic. – The student will be able to:
114.01	Review the anatomy and physiology of the reproductive system.
114.02	Define the stages of labor and discuss how to assess them.
114.03	Differentiate between cephalic and abnormal delivery.
114.04	Describe the management of a patient with pre-delivery emergencies.
114.05	Discuss and demonstrate the patient care for all stages of labor in a cephalic delivery for the mother and the newborn.
114.06	Describe the procedures for handling complications of delivery.
114.07	Describe the management of the mother post-delivery.
114.08	Demonstrate the procedures for handling complications of pregnancy including per-eclampsia and high risk.
114.09	Describe the management of the mother post-delivery.
114.10	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
114.11	Describe special considerations when meconium is present in amniotic fluid or during delivery.
115.0	<b>Neonatal Care:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the neonatal patient within the scope of practice of the paramedic. – The student will be able to:
115.01	Review the term neonate.
115.02	Identify antepartum and intrapartum factors that can affect the neonate.
115.03	Discuss pulmonary perfusion and asphyxia.

115.04 Calculate the Apgar score given various neonate situations.
115.05 Review resuscitation equipment and procedures for the neonate
115.06 Determine when an orogastric tube should be inserted during positive-pressure ventilation.
115.07 Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
115.07.01 apnea
115.07.02 bradycardia
115.07.03 acidosis
115.07.04 pneumothorax
115.07.05 meconium-stained
115.07.06 low blood volume
115.07.07 dysphemistic hernia
115.07.08 respiratory distress
115.07.09 respiratory depression secondary to narcotics
115.07.10 low birth weight
115.07.11 seizures
115.07.12 hypoglycemia
115.07.13 diarrhea
115.07.14 jaundice
115.07.15 fever
115.07.16 hypothermia
115.07.17 birth injuries
115.07.18 cardiac conditions
115.08 Discuss post arrest management of the neonate.
115.09 Discuss vascular access cannulation techniques for a newborn including umbilical vein/artery access.
<b>116.0 Pediatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the pediatric patient within the scope of practice of the paramedic. – The student will be able to:
116.01 Discuss key anatomical, physiological, and developmental characteristics of infants and children and their implications.
116.02 Review and demonstrate techniques for successful assessment and treatment of infants and children.
116.03 Review airway and ventilatory considerations and procedures for pediatric patients.
116.04 Discuss the indications and methods for gastric decompression for infants and children.



116.05	Discuss the pathophysiology, signs and symptoms, assessment and management of the following, including but not limited to:
116.05.01	altered level of consciousness
116.05.02	trauma
116.05.03	hypo-perfusion
116.05.04	respiratory distress/failure
116.05.05	cardiac dysrhythmia
116.05.06	neurological emergency
116.05.07	abuse/neglect
116.05.08	SUIDS
116.05.09	FABO
116.05.10	respiratory emergencies
116.05.11	congenital heart disease
116.05.12	hydrocephalus/VP shunts
116.06	Discuss the appropriate procedure and equipment for vascular and intraosseous access.
116.07	Review basic cardiac life support (CPR) guidelines for infants and children.
116.08	Integrate advanced life support skills with basic cardiac life support for infants and children.
116.09	Discuss the indications, dosage, route of administration and special considerations for medication administration in infants and children.
116.10	Describe Sudden Unexplained Infant Death Syndrome (SUIDS), current theories, assessment and management, and the immediate needs of the family.
116.11	Discuss the parent/caregiver responses to the death of an infant or child.
116.12	Discuss and demonstrate the use of a length-based resuscitation tape and other methods for determining equipment sizes, drug doses, and other pertinent information for a pediatric patient.
116.13	Discuss proper placement of a gastric tube in infants and children.
116.14	Review appropriate routes and techniques for medication administration.
116.15	Demonstrate appropriate parent/caregiver interviewing techniques for infant and child death situations.
117.0	<b>Geriatrics:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of the management of the geriatric patient within the scope of practice of the paramedic. – The student will be able to:
117.01	Review and discuss the term geriatrics
117.02	Review the anatomy, physiology, and pathophysiology of the geriatric patient.
117.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
117.04	Discuss the importance of fall prevention with the geriatric patient.

117.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
117.06	Describe the common causes, assessment and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
117.07	Discuss the impact of polypharmacy and medication non-compliance on patient assessment and management.
117.08	Discuss medication issues of the elderly including polypharmacy, dosing errors and increased drug sensitivity and toxicology.
118.0	<b>Patients with Special Challenges:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of management of the patient with special challenges within the scope of practice of the paramedic across the life span. – The student will be able to:
118.01	Discuss the special considerations required when providing emergency care to patients with:
118.01.01	abuse/neglect of vulnerable populations
118.01.02	homelessness
118.01.03	poverty
118.01.04	bariatrics
118.01.05	tech dependent
118.01.06	hospice/terminally ill
118.01.07	tracheostomy
118.01.08	home care
118.01.09	sensory deficit/loss
118.01.10	developmental disability
118.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
118.02.01	respiratory devices
118.02.02	cardiac devices
118.02.03	gastro-urinary devices
118.02.04	central & peripheral IV catheters
118.03	Describe home care and the types of patients it serves and the services it encompasses.
118.04	Describe the characteristics associated with the profile of the typical abuser of:
118.04.01	domestic abuser
118.04.02	elder abuser
118.04.03	child abuser
118.05	Discuss the role of the Paramedic as a patient advocate for vulnerable populations.
118.06	Differentiate between hospice/palliative care and curative care.
118.07	Describe paraplegia/quadriplegia.
118.08	Describe the various etiologies of mental illness.

118.09	Recognize the presenting signs of the following:
118.09.01	autism spectrum
118.09.02	developmental disability
118.09.03	down's syndrome
118.10	Describe the following diseases/illnesses and identify each of their possible presenting signs, including but not limited to:
118.10.01	arthritis
118.10.02	cancer
118.10.03	cerebral palsy
118.10.04	cystic fibrosis
118.10.05	multiple sclerosis
118.10.06	muscular dystrophy
118.10.07	myasthenia gravis
118.10.08	poliomyelitis
118.10.09	spina bifida,
118.10.10	patients with a previous head injury
118.10.11	mental illness
118.11	Review hospice care, comfort care and DNR/DNAR as they relate to local practice, law and policy.
118.12	Describe the access and discuss indwelling catheters, implanted central IV ports and central line monitoring.
118.13	Describe complications of assessing each of the airway, vascular access, and GI/GU devices.
118.14	Identify and describe the failure of wound drains.
118.15	Review the rights of the terminally ill.
118.16	Demonstrate proper tracheotomy care.
118.17	Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
119.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport. – The student will be able to:
119.01	Review the EMT standards and benchmarks for the Principles of Safely Operating a Ground Ambulance.
120.0	<b>Incident Management:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
120.01	Review the EMT standards and benchmarks for Incident Management and apply a complex depth and comprehensive breadth of establishing and working within the incident management system.
121.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
121.01	Review the EMT standards and benchmarks for Multiple Casualty Incidents.

122.0	<b>Air Medical:</b> Demonstrate a complex depth, comprehensive breadth of knowledge of air medical transport risks, needs and advantages. – The student will be able to:
122.01	Describe the advantages and disadvantages of air medical transport.
122.02	Identify appropriate reasons for the use of air medical for emergency patient transport.
122.03	Describe the risks involved with the use of air medical transport.
122.04	Demonstrate the actions needed to ensure effective and safe ground operations involving air medical response.
122.05	Demonstrate appropriate communication of information needed for safe and effective interaction between the air medical crew and ground personnel.
123.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:
123.01	Review the EMT standards and benchmarks for Vehicle Extrication.
124.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
124.01	Review the EMT standards and benchmarks for Hazardous Materials Awareness.
125.0	<b>Mass Casualty Incidents due to Terrorism and Disasters:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:
125.01	Review the EMT standards and benchmarks for Mass Casualty Incidents.
<b>Management Option: This option (outcomes 126-136) prepares students for administrative and supervisory positions in the Emergency Medical Services field.</b>	
126.0	Demonstrate leadership and administrative skills basic to management emergency medical service systems. – The student will be able to:
126.01	Describe an emergency medical service system, its scope, national, state and local involvement, and the organizational climate that serves as the setting and framework for managing an emergency medical service system.
126.02	Identify current trends and perspectives related to the management of health care organizations in general, and emergency medical service systems in particular, and the means by which the application of sound management principles and behavior can facilitate change.
126.03	Interpret managerial principles, practices and processes and relate them to emergency medical service systems.
126.04	Identify the role, responsibilities and parameters for the various levels of management within emergency medical service systems.
126.05	State the control processes and techniques used to ensure that the objectives, strategies, and policies of the emergency medical service system are achieved effectively and efficiently.
126.06	Relate the various aspects of organizational dynamics (decision making, motivations, leadership, and communication) to the needs and problems of emergency medical service systems.

126.07	Relate personnel administration practices to the total scope of labor relations, including manpower acquisition, maintenance, and utilization.
127.0	Interpret federal, state and local laws as they apply to emergency medical service systems. – The student will be able to:
127.01	List and discuss federal, state and local laws, administrative rules, requirements and recommendations relating to emergency medical service systems.
127.02	List required standards and procedures for facility and staff.
127.03	Identify mandatory requirements regarding environmental health and safety standards.
127.04	Discuss the impact of legislative changes on emergency medical service systems.
128.0	Demonstrate knowledge of operational and organizational structures of emergency medical service systems. – The student will be able to:
128.01	Describe the functions and standards of departments in emergency medical service systems.
128.02	Contrast administrative roles and responsibilities in different types of emergency medical service systems.
128.03	Describe principles and philosophies of emergency medical service systems.
128.04	Identify several basic principles of emergency medical care.
128.05	Describe communication techniques within health care systems.
128.06	Utilize state of the art language and terminology when communicating within the emergency medical service system.
129.0	Demonstrate knowledge of psychological problems and stressors in emergency medical service employees and find appropriate solutions. – The student will be able to:
129.01	Demonstrate knowledge of the worth and dignity of each employee.
129.02	Accommodate individual differences, characteristics, and behaviors.
129.03	Adjust employee schedules, personnel assignments, etc. to provide optimum performance.
130.0	Demonstrate knowledge of materials and supplies used in emergency medical service systems. – The student will be able to:
130.01	Evaluate current inventory.
130.02	Prepare purchase orders with knowledge of current financial status and budgetary constraints.
130.03	Demonstrate knowledge of optimum quality, price, and quantity.
131.0	Demonstrate knowledge of occupational safety and health. – The student will be able to:
131.01	Prepare a plan for employee safety in the event of emergency situations involving business or office facilities.

131.02	Identify hazardous materials and substances in the workplace.
131.03	Identify appropriate storage facilities for all substances.
131.04	Conduct in-service for employees.
131.05	Respond to employee inquiries and post notices as needed.
131.06	Implement appropriate Joint Commission patient safety goals.
132.0	Demonstrate knowledge of appropriate workloads for each employee. – The student will be able to:
132.01	Prepare job descriptions.
132.02	Prepare job advertisements and notices.
132.03	Compute man-hours required for each job position within the emergency medical service system.
132.04	Identify factors that alter the workload and man-hours computed for each position.
133.0	Review, approve and monitor departmental capital and operational budgets. – The student will be able to:
133.01	Develop capital budget justification format.
133.02	Delegate capital budget preparation to key managers.
133.03	Analyze and approve appropriate capital budget items.
133.04	Develop an operational budget format.
133.05	Analyze and approve appropriate financial levels in each operational budget.
134.0	Identify and apply legal reimbursement systems. – The student will be able to:
134.01	Establish an item charge system that meets reimbursement system requirements.
134.02	Establish a mechanism for utilization review and quality assurance.
134.03	Develop an accounts receivable system which monitors and optimizes reimbursement.
135.0	Comply with accreditation standards of governmental or governmental-appointed agencies and organizations. – The student will be able to:
135.01	Describe and discuss procedures to meet required standards for emergency medical service systems.
135.02	Identify the required standards for health care personnel in general and emergency medical service personnel in particular.

135.03	Develop policies and operational procedures to meet required standards.
135.04	Establish liaison mechanisms with appropriate accrediting organizations.
136.0	Demonstrate computer literacy. – The student will be able to:
136.01	Describe and demonstrate function and operation of basic computer systems.
136.02	Describe and demonstrate various types of computer systems and their specific applications.
136.03	Describe and demonstrate general applications such as word processing, database management, spreadsheets, and communications.
136.04	Describe and discuss special applications such as computer-aided dispatch (CAD), quality assurance, and inventory control.
<b>Education Option: This option (outcomes 137-142) prepares students as trainers and/or instructors in the EMS field.</b>	
137.0	Demonstrate knowledge of basic teaching methods, learning and educational psychology. – The student will be able to:
137.01	Describe and demonstrate various methods of student learning.
137.02	Describe and demonstrate various methods of teaching as they apply to student learning techniques.
137.03	Describe and demonstrate competency-based education (CBE).
137.04	Describe and demonstrate short-term and long-term memory and the implications of each on the student learning process.
137.05	Describe and demonstrate various educational psychologies.
138.0	Describe and discuss curriculum design and development. – The student will be able to:
138.01	Develop and discuss needs assessments.
138.02	Develop a task analysis.
138.03	Develop student behavioral objectives.
138.04	Design and develop competency-based curriculum.
138.05	Integrate curriculum with current occupational responsibilities.
138.06	Perform on-going curriculum review and development.
139.0	Demonstrate appropriate measurement and evaluation skills. – The student will be able to:
139.01	Construct appropriate objective tests commensurate with curriculum.

139.02	Develop effective measurement instruments for student performance in clinical settings.
139.03	Develop effective evaluation tools for evaluating student performance.
139.04	Record, monitor, and provide feedback to student regarding student progress.
140.0	Demonstrate mastery of required technical skills. – The student will be able to:
140.01	Demonstrate performance of basic life support instructor skills.
140.02	Demonstrate performance of advanced life support instructor skills.
140.03	Demonstrate performance of trauma life support instructor skills.
140.04	Demonstrate performance of other medical skills appropriate to the emergency medical services curriculum.
141.0	Demonstrate classroom management skills. – The student will be able to:
141.01	Demonstrate and apply effective leadership skills.
141.02	Demonstrate and apply effective motivational skills.
141.03	Demonstrate and apply effective organizational skills.
141.04	Demonstrate and apply effective disciplinary skill.
142.0	Demonstrate computer literacy. – The student will be able to:
142.01	Describe and discuss various types of computer systems and their specific applications as they relate to Emergency Medical Services.
142.02	Describe and discuss applications such as word processing, database management, spreadsheets, communications, and computer-aided instruction (CAI) as they relate to Emergency Medical Services.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

The following ATD program has been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Emergency Medical Technician-ATD (0351090403/0351090404) – 11 credits (This program will be daggered beginning in 2016-2017 school year.)

Emergency Medical Technician –ATD (New) (0351090413/0351090408) – 12 credits

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Emergency Medical Technician (NREMT001) – 9 credits

Through the use of common core courses and the addition of several optional courses, this program is designed to prepare students for employment in the following occupational areas:

Education Option: Field Training Officer, In-service Training Officer, or EMS Instructor, **SOC Code 25-1194 Vocational Education Teachers, Postsecondary** or to provide supplemental training for persons previously or currently employed in these occupations. The program must be approved by the Department of Health, Office of Emergency Medical Services (EMS); and the curriculum must adhere to the US Department of Transportation (DOT) National EMS Educational Standards for both the EMT and Paramedic.

Management Option: EMS Coordinator, EMS Supervisor, EMS Shift Supervisor, Operations Manager, EMS Manager, or Director of EMS Services. SOC Code 11-1021 (General and Operations Managers).

### Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Paramedic (0351090405) – 42 credit hours

Emergency Medical Technician (0351090415) – 12 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Nuclear Medicine Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351090502
Program Type	College Credit
Standard Length	75 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2033 Nuclear Medicine Technologists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as radiologic technologists or nuclear medicine technologists, SOC Code-29-2033 (Nuclear Medicine Technologists) or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to the utilization of radioactive materials for diagnostic and therapeutic procedures, patient care, administrative functions, health and safety including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 75 credit hours.

**Regulated Programs**

**The program must also be approved by the Department of Health Bureau of Radiation Control.**

The graduate is eligible to be licensed in Florida as a Certified Radiologic Technologist - Nuclear Medicine (i.e., a Nuclear Medicine Technologist). As specified in Chapter 468, Part IV and 64E-FAC. All accredited NMT programs which are recognized and accepted by either the American Registry of Radiologic Technologists (ARRT), or the Nuclear Medicine Technology Certification Board (NMTCB), are approved by the Department of Health.

Students who complete the program will be eligible to apply to the Department of Health for the required state Nuclear Medicine Technologist license. For further information contact:

Department of Health  
MQA Radiologic Technology Program  
4052 Bald Cypress Way, Bin #C85  
Tallahassee, FL 32399  
Phone: (850) 245-4910  
Fax: (850) 921-6365

Students who complete the program will be eligible to make an application to take one or both of the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

Or

Nuclear Medicine Technology Certification Board (NMTCB)  
3558 Habersham at Northlake  
Building I  
Tucker, GA 30084  
Toll Free: (800) 659-3953

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice radiation safety.
- 13.0 Practice basic radio-pharmacy.
- 14.0 Calculate doses and administer radiopharmaceuticals and interventional pharmaceuticals.
- 15.0 Perform "in vitro"/"in vivo" non-imaging procedures.
- 16.0 Perform imaging procedures.
- 17.0 Practice quality control.

Florida Department of Education  
Student Performance Standards

**Program Title:** Nuclear Medicine Technology  
**CIP Number:** 1351090502  
**Program Length:** 75 credit hours  
**SOC Code(s):** 29-2033

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Practice radiation safety. – The student will be able to:
12.01	Maintain compliance with local, state and federal regulations.
12.02	Follow appropriate protection procedures for patients, coworkers, and public.
12.03	Follow approved procedures for identifying and labeling radioactive material and radiopharmaceutical doses.
12.04	Perform area surveys and wipe tests.
12.05	Dispose of radioactive wastes appropriately and in accordance with local, state, and federal regulations.
12.06	Apply and interpret proper personnel monitoring of radiation exposure.
12.07	Perform decontamination procedures.
12.08	Implement appropriate accrediting/regulatory agency guidelines.
13.0	Practice basic radio-pharmacy. – The student will be able to:
13.01	Maintain radiopharmaceutical laboratory records and materials.
13.02	Perform generator eluate.
13.03	Prepare radiopharmaceuticals including quality control tests.

13.04	Demonstrate understanding of ordering radiopharmaceuticals in appropriate dosage and effective time frame.
14.0	Calculate doses and administer radiopharmaceutical and interventional pharmaceuticals. – The student will be able to:
14.01	Perform dose calibrator quality control tests.
14.02	Calculate the activity and volume of dose.
14.03	Assay radiopharmaceuticals.
14.04	Properly administer dose using appropriate route.
14.05	Calculate, prepare, and administer radiopharmaceuticals and interventional pharmaceuticals.
14.06	Perform venipuncture accurately and efficiently.
14.07	Participate in the tagging of blood cells.
14.08	Maintain records of administrations/preparations.
14.09	Recognize and follow precautions and contraindications of medications including radiopharmaceuticals.
14.10	Evaluate patient history.
14.11	Evaluate patient status/needs and care for them accordingly, including treatment for adverse effects.
14.12	Document and maintain records according to facility protocol.
15.0	Perform "in vitro"/"in vivo" non-imaging procedures. – The student will be able to:
15.01	Operate laboratory equipment.
15.02	Accurately and efficiently collect specimens in accordance with facility protocol.
15.03	Operate radiation detection equipment.
15.04	Perform radioassays and calculations.
16.0	Perform imaging procedures. – The student will be able to:
16.01	Verify order, history, and protocol for patient prior to proceeding.
16.02	Verify identity of patient in accordance with facility protocol.
16.03	Explain procedure and prepare patient for procedure.

16.04	Select proper acquisition parameters to obtain planar, SPECT/CT, and PET/CT images.
16.05	Appropriately perform planar, SPECT/CT, and PET/CT data processing using reconstruction techniques.
16.06	Properly prepare images to be sent to physician according to facility protocol.
16.07	Perform PACS procedures according to facility protocol.
16.08	Maintain appropriate records.
17.0	Practice quality control. – The student will be able to:
17.01	Perform scheduled quality control testing of laboratory and imaging equipment.
17.02	Operate scintillation detectors.
17.03	Operate and perform daily quality control on gas-filled detectors.
17.04	Maintain a quality assurance program according to accrediting and regulatory agencies.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program must be accredited by the:

Joint Review Committee on Educational Programs in Nuclear Medicine Technology  
2000 W. Danforth Rd., Ste 130 #203  
Edmond OK 73003  
Tel: (405) 285-0546  
Fax: (405) 285-0579

Or

Southern Association of Colleges and Schools (SACS)  
2520 Northwinds Parkway  
Suite 600  
Alpharetta, GA 30009  
888-41ED NOW (888-413-3669)

The nuclear medicine technologist performs patient care with understanding of patients' special needs, fears and concerns and recognizes changes in patient condition. Limiting the exposure of the patient and other health care workers to minimal levels of radiation is of paramount importance.

A fundamental knowledge and understanding of the physical and biological sciences, including radiation biology and protection, as well as radiopharmaceuticals "in vivo" and "in vitro", is essential: nuclear physics, biochemistry, immunology, physiology and an introduction to computer application/operation with data manipulation must be included.

Students are encouraged to become members of their appropriate professional organizations such as the Society of Nuclear Medicine – Technologist Section (SNM-TS), Florida Nuclear Medicine Technologists, Inc. (FNMT), the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its local affiliate.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Nuclear Medicine Technology Specialist (0351090503) – 48 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Radiation Therapy  
**Career Cluster:** Health Science

**AS**

CIP Number	1351090701
Program Type	College Credit
Standard Length	77 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-1124 Radiation Therapists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as Radiation Therapy Technologist SOC Code 29-1124 (Radiation Therapists) or to provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to performing radiation therapy procedures with skill and understanding to practice the art and science of radiation therapy technology; to administer the prescribed radiation therapy treatments of the highest caliber, thereby providing the patient treatments of the highest quality and accuracy; to become members of the health care team that contributes to the physical and psychological comfort of the patient, to provide radiation protection to the patient, self and health care team; to work with the health care team to improve radiotherapeutic health care in the hospital and community; and to understand the importance of maintaining membership in the professional organizations and keeping abreast of the changes in the field of radiation therapy.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 77 credit hours.

## **Regulated Programs**

### **This program is regulated by the Florida Department of Health; Bureau of Radiation Control.**

The program must be accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901 (312) 704-5300, or by the Southern Association of Colleges and Schools to enable graduates to become candidates for examination in Radiation Therapy Technology by the American Registry of Radiologic Technologists. It may also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a certified Radiation Therapy Technologists. As specified in Chapter 468 Part IV F.S. and Chapter 64E-3 F.A.C.

Students completing the program will be eligible to make application to take the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612/687-0048)

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice.
- 02.0 Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels.
- 03.0 Demonstrate proficiency in imaging and processing in radiation oncology.
- 04.0 Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels.
- 05.0 Demonstrate a functional knowledge of medical terminology required in radiation therapy.
- 06.0 Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy.
- 07.0 Demonstrate knowledge of the foundational principles and practices of radiation therapy.
- 08.0 Demonstrate knowledge of essential concepts related to pathophysiology.
- 09.0 Demonstrate knowledge of the fundamental principles of radiation therapy.
- 10.0 Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease.
- 11.0 Demonstrate the skills, procedures and knowledge required for effective quality management.
- 12.0 Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist.
- 13.0 Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting.
- 14.0 Demonstrate the principles of radiation protection and safety for the radiation therapist.
- 15.0 Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery.
- 16.0 Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics.
- 17.0 Demonstrate proficiency in research methods and information literacy.
- 18.0 Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy.
- 19.0 Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment.

Florida Department of Education  
Student Performance Standards

**Program Title:** Radiation Therapy  
**CIP Number:** 1351090701  
**Program Length:** 77 credit hours  
**SOC Code(s):** 29-1124

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**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate the proficiency in the skills and knowledge required of clinical practice. -- The student will be able to:
01.01	Operate within the radiation therapy scope of practice.
01.02	Demonstrate values and attitudes congruent with the profession's standards and ethics.
01.03	Formulate priorities in daily clinical practice.
01.04	Apply concepts of teamwork.
01.05	Adapt to dynamic clinical situations.
01.06	Establish patient-centered, clinically effective service delivery strategies.
01.07	Deliver a prescribed course of treatment adhering to acceptable departmental, institutional, governmental and professional standards.
01.08	Assess the patient's status and condition in order to deliver a prescribed course of radiation therapy.
01.09	Use critical thinking for accurate treatment delivery by demonstrating knowledge of didactic concepts.
01.10	Demonstrate the principles of radiation protection.
01.11	Monitor tumor lethal dose and normal tissue tolerance dose.
01.12	Evaluate the patient's clinical response to treatment parameters as prescribed to determine if medical intervention by the doctor is necessary.
01.13	Apply the principles of total quality management.

01.14	Detect equipment malfunctions and take appropriate action.
01.15	Construct and prepare immobilization, beam alignment and beam modification devices.
01.16	Design, evaluate and implement treatment plans.
01.17	Validate manual and computer dosimetric calculations.
01.18	Perform simulation, localization and therapeutic procedures as they pertain to radiation therapy in accordance with national patient safety standards.
01.19	Demonstrate appropriate and effective communication.
01.20	Demonstrate safe, ethical and legal practices.
01.21	Evaluate the significance of the patient's unique diagnosed cancerous pathology to formulate appropriate simulations and treatment actions.
01.22	Apply appropriate safety, transfer and immobilization principles.
01.23	Apply concepts of teaching and learning theories in design, implementation and evaluation in the education of patient, family, colleagues and the community.
01.24	Describe departmental resources that are designed to meet the health and wellness of patient needs.
01.25	Demonstrate appropriate interaction with patients and patients' family and friends.
01.26	Assess patient side effects and complications to create an interdisciplinary management strategy that fosters prevention, healing and comfort.
01.27	Document all aspects of patient care and management in the appropriate record.
01.28	Document and communicate errors and discrepancies in accordance with institutional and national quality management procedures.
01.29	Demonstrate knowledge of situations where life support procedures would be necessary.
01.30	Document knowledge of the institution's procedures in response to emergencies, disasters and accidents.
01.31	Apply strategies that ensure professional development at a level of clinical practice consistent with acceptable standards.
01.32	Demonstrate quality assurance procedures for all treatment delivery equipment and accessories.
01.33	Evaluate outcomes to continuously improve radiation therapy services.
01.34	Incorporate Health Insurance Portability and Accountability Act (HIPAA) requirements into clinical practice.
01.35	Interpret treatment planning prior to and during a course of treatment.

02.0	Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels. -- The student will be able to:
02.01	Identify theories and principles that guide ethical decision making for practice situations.
02.02	Define practice situations that carry high potential for dilemmas that require ethical scrutiny.
02.03	Discuss basic ethical duties of health care providers.
02.04	Demonstrate an awareness of and sensitivity to various cultural and ethnic differences among various client groups.
02.05	Discuss the concept of patient advocacy in support of patients' rights.
02.06	Discuss ethical theories and models.
02.07	Discuss the radiation therapy scope of practice, code of ethics and practice standards.
02.08	Examine concepts of personal honesty, integrity, accountability and professional compassion as ethical imperatives in professional practice.
02.09	Differentiate between distributive, compensatory and retributive justice.
02.10	Differentiate between provider and patient relationships.
02.11	Discuss the duty of the radiation therapist to take responsibility for actions and decisions.
02.12	Discuss the elements of an informed consent.
02.13	Discuss standards of disclosure.
02.14	Analyze issues related to the use and flow of patient information to determine confidentiality.
02.15	Explain ethical issues related to different age groups.
02.16	Identify current ethical issues in health care.
02.17	Demonstrate application of a system of examination, clarification, determination, the doctrine of informed consent and other issues related to patient rights.
02.18	Explain ethical issues related to the profession.
02.19	Discuss the relationship between ethics and health care policy.
02.20	Examine ethical issues arising daily in a radiation therapy department.
03.0	Demonstrate proficiency in imaging and processing in radiation oncology. -- The student will be able to:
03.01	Define terminology associated with digital imaging systems.



03.02	Describe the various types of digital receptors.
03.03	Discuss the fundamentals of digital imaging.
03.04	Discuss image acquisition on the simulator and linear accelerator.
03.05	Describe the evaluative criteria for imaging detectors on the simulator and linear accelerator.
03.06	Describe the histogram and the process or histogram analysis as it relates to automatic rescaling and determining an exposure indicator.
03.07	Identify the exposure indices for digital imaging receptors on the simulator and linear accelerator.
03.08	Discuss the response of digital imaging systems to background and scatter radiation on the simulator and linear accelerator.
03.09	Identify appropriate measures to control scatter in the simulator and linear accelerator rooms.
03.10	Explain methods to avoid histogram analysis errors.
03.11	Describe image processing employed for digital images.
03.12	Associate the impact of image processing parameters to the image appearance.
03.13	Associate the effects of inappropriate processing on image clarity or conspicuity.
03.14	Describe and apply the fundamental physical principles of exposure for digital detectors.
03.15	Describe the selection of technical factors to ensure appropriate receptor exposure levels for digital detectors.
03.16	Describe the conditions that cause quantum mottle in a digital image.
03.17	Explain methods to avoid poor quality images in simulation and treatment planning.
03.18	Examine the potential impact of digital imaging systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
03.19	Describe picture archiving and communications system (PACS) and its function.
03.20	Identify components of a PACS system.
03.21	Describe patient benefits gained through the use of telemedicine.
03.22	Identify modality types that may be incorporated into a PACS.
03.23	Define digital imaging and communications in medicine (DICOM).
03.24	Describe data flow for a DICOM image from an imaging modality to a PACS.

03.25	Describe HIPAA concerns with electronic information.
03.26	Identify common problems associated with retrieving/viewing images.
03.27	Analyze relationships of factors affecting image contrast, density and resolution to determine optimal image quality.
03.28	Apply techniques to enhance image details and reduce image distortion.
03.29	Determine artifact types, cause and preventive measures.
03.30	Explain the basic principles of image formation for each of the following modalities: magnetic resonance (MR), ultrasound imaging and nuclear medicine.
03.31	Describe and explain functions of the components of the computed tomography (CT) imaging system.
03.32	Differentiate between conventional and spiral/helical CT scanning.
03.33	List the CT computer data processing steps.
03.34	Name the functions of the array processor used for image reconstruction.
03.35	Explain the difference between reconstructing and reformatting an image.
03.36	Describe the application of the following terms to CT:
03.36.01	Pixel.
03.36.02	Matrix.
03.36.03	Voxel.
03.36.04	Linear attenuation coefficient.
03.36.05	CT/Hounsfield number.
03.36.06	Partial volume averaging.
03.36.07	Window width (ww) and window level (wl).
03.36.08	Spatial resolution.
03.36.09	Contrast resolution.
03.36.10	Noise.
03.36.11	Annotation.
03.36.12	Region of interest (ROI).
03.36.13	Standard vs. volumetric data acquisition.
03.37	Identify the types and appearance of artifacts most commonly affecting CT images.
03.38	Explain how artifacts can be reduced or eliminated.
03.39	Describe current data storage techniques used in CT.
03.40	Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.

04.0	Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels. -- The student will be able to:
04.01	Apply concepts related to social, political, economic and historical issues to analyze the different sources of law.
04.02	List the steps in a civil legal procedure and identify the potential role of a radiation therapist.
04.03	Assess the role of effective communication skills in reducing legal action.
04.04	Analyze negligence related to clinical practice issues of simulation, treatment delivery, patient assessment, patient education and quality assurance to determine if negligence is present.
04.05	Examine the role of the radiation therapist in the informed consent process, patient rights and practice standards.
04.06	Analyze safety programs to reduce patient injury.
04.07	Examine the importance of documentation and maintenance of clinical practice records.
04.08	Formulate a risk management program.
04.09	Analyze the role of code of ethics, radiation therapy scope of practice and radiation therapy practice standards as guides to assess the appropriateness of professional actions.
04.10	Discuss the practice of lifelong learning in maintaining professional competence.
05.0	Demonstrate a functional knowledge of medical terminology required in radiation therapy. -- The student will be able to:
05.01	Identify primary language sources from which medical terms are derived.
05.02	Define medical terms according to basic elements.
05.03	Interpret language, abbreviations and symbols in the medical record.
06.0	Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy. --The student will be able to:
06.01	Identify CQI opportunities.
06.02	Explain the differences between CQI and QA.
06.03	Select appropriate CQI tools for specific situations.
06.04	Apply CQI principles to specific situations.
06.05	Discuss human resources' role in the work environment.
06.06	Discuss the need for organizational and departmental accreditation.
06.07	Recognize accreditation effects on radiation therapy operations.

06.08	Use appropriate current procedural terminology (CPT) codes for professional and technical charges.
06.09	Summarize the various types of insurance and the mechanisms necessary for approval of care.
06.10	Discuss reimbursement for radiation therapy services.
06.11	Compare the components and methods of developing and managing a departmental budget.
07.0	Demonstrate knowledge of the foundational principles and practices of radiation therapy. -- The student will be able to:
07.01	Discuss the policies and procedures of the educational program.
07.02	Discuss the policies and procedures of clinical education settings.
07.03	Identify the responsibilities of a radiation therapy student.
07.04	Use library/Internet resources pertinent to radiation oncology.
07.05	Discuss maintaining patient and student confidentiality.
07.06	Analyze the importance of multidisciplinary care of cancer patients.
07.07	Discuss the philosophy and mission of health care delivery systems and educational programs.
07.08	Incorporate key terms used in the principles and practice of radiation therapy.
07.09	Identify the contents/sections of the patient's records.
07.10	Explain radiation safety procedures for radiation therapy.
07.11	Explain health safety procedures for personnel and patients.
07.12	Differentiate between accreditation, credentialing, certification, registration, licensure, and regulations.
07.13	Explain the purposes, functions and activities of international, national, state and local professional organizations.
07.14	Discuss the importance of professional and community commitment.
07.15	Discuss the radiation therapist scope of practice, practice standards and professional code of ethics.
07.16	Discuss the benefits of continuing education as related to improving the quality of patient care, professional development and personal enhancement.
07.17	Discuss career advancement and opportunities for the radiation therapist.
08.0	Demonstrate knowledge of essential concepts related to pathophysiology. -- The student will be able to:

08.01	Describe the physiological response in inflammation and cell injury due to pathological insult.
08.02	Assess the predictive factors, including genetics, lifestyles, age and environment as they influence the development of cancer and associated diseases.
08.03	Compare the body's response to hereditary, lifestyle, age and environmental factors.
08.04	Given a specific oncologic-related disease, determine probable diagnostic, prognostic, staging, grading and the rationale for the appropriate therapeutic pathway.
08.05	Given the histology of a neoplasm, determine the tumor characteristics.
08.06	Given a common disease, anticipate the effects of the disease on the oncologic patient.
09.0	Demonstrate knowledge of the fundamental principles of radiation therapy. -- The student will be able to:
09.01	Given diagnostic information about a particular cancer, determine the appropriateness of using radiation therapy as a primary treatment modality.
09.02	Determine the medical and patient information necessary to develop a radiation therapy treatment plan.
09.03	Determine the appropriate treatment energy for any given tumor type or location.
09.04	Differentiate between beam modifiers and their uses with a variety of treatment energies.
09.05	Determine the appropriate treatment setup aid, immobilization technique and beam modifier for a given treatment technique.
09.06	Identify inconsistencies between treatment prescription and treatment plan.
09.07	Develop a CT simulation plan for a particular tumor to include steps needed prior to, during and after the procedure.
09.08	Critique treatment images in relation to simulation images.
09.09	Discuss the radiation therapist scope of practice and practice standards.
10.0	Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease. -- The student will be able to:
10.01	Distinguishes tumor histology to determine pathways associated with cancer and neoplastic disease.
10.02	Examine the role of surgical, radiation and medical oncology to include immunotherapy (biological therapy) and personalized medicine in the management of neoplastic disease.
10.03	Discuss multidisciplinary emerging approaches to neoplastic disease management.
10.04	Discuss the role of radiation therapy in the management of all patient populations with benign and malignant diseases.
10.05	Discuss epidemiologic and etiologic information pertinent to each neoplastic site.

10.06	Discuss the clinical presentation for each anatomic neoplastic site.
10.07	Discuss preventive methods/screening tools associated with each neoplastic site.
10.08	Explain detection, diagnosis, grading and staging systems for each neoplastic site.
10.09	Implement the principles and practice of simulation to prepare a patient for treatment.
10.10	Apply the parameters of treatment field design and arrangement used to treat neoplastic diseases.
10.11	Examine the role of radiation therapy in palliative disease management.
10.12	Identify the treatment regimens and fractionalization schemes used in palliative disease management.
10.13	Describe the role of radiation therapy in the management of oncology emergencies.
11.0	Demonstrate the skills, procedures and knowledge required for effective quality management. -- The student will be able to:
11.01	Discuss the components of a quality management (QM) program in developing a culture of safety in radiation oncology.
11.02	Discuss the purpose, function and member's role on a quality management team.
11.03	Explain federal, state and institutional accreditation standards and reporting regulations for quality management.
11.04	Examine outcomes of quality management in radiation oncology.
11.05	Explain the purpose, procedures and frequency for manual and electronic treatment documentation.
11.06	Identify errors in treatment documentation.
11.07	Describe the procedure for assuring accuracy of manual and electronic records.
11.08	Examine the purpose and function of record and verify systems.
11.09	Examine the patient chart in terms of medical and legal issues.
11.10	Discuss the significance of treatment outcomes for patient care, education and research in radiation oncology.
11.11	Discuss the quality indicators to evaluate patient care areas.
11.12	Explain the purpose, procedure and frequency for all QA and QM procedures in a radiation therapy department.
11.13	Evaluate how the outcomes of QA and QM procedures impact patient care, education and research.
11.14	Examine statistical reporting available through quality assurance computerization.

11.15	Perform quality measures for computerized operation, data collection and reporting.
11.16	Determine sources of malfunction on the treatment and simulation/localization units.
11.17	Distinguish between safe and hazardous equipment operation.
11.18	Comply with acceptable quality limits for treatment operation.
11.19	Identify the source of error and determine the effect on treatment delivery, education and research.
11.20	Differentiate between quality management programs.
11.21	Discuss the importance of patient education in the quality management process.
11.22	Discuss the importance of proper patient identification and treatment field documentation.
11.23	Discuss aspects of clinical evaluation, therapeutic decision-making and informed.
11.24	Identify the key aspects of delivering a precise prescribed treatment dose.
11.25	Discuss quality control procedures and recommended tolerances for simulation equipment, megavoltage treatment units and treatment planning systems.
11.26	Discuss quality control procedures and recommended tolerances for the safe handling of brachytherapy sources and remote after loading equipment.
11.27	Defend the rationale for near miss and error report.
11.28	Critique the safety in radiation oncology.
12.0	Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist. -- The student will be able to:
12.01	Integrate laws and principles of radiation biology to the clinical practice of radiation therapy.
12.02	Identify radiosensitive components of the cell.
12.03	Distinguish between units of radiation quantities and radiobiologic measures using SI units.
12.04	Differentiate between direct and indirect effects of ionizing radiation.
12.05	Explain factors affecting relative biological effectiveness (RBE).
12.06	Discuss the effects of electromagnetic and particulate radiations on cellular interactions.
12.07	Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.
12.08	Determine biologic damage due to radiation-induced chemical reactions.

12.09	Discuss radiation effects on the cell cycle.
12.10	Compare somatic and genetic effects of radiation.
12.11	Describe factors influencing radiation response of cells and tissues.
12.12	Discuss the laws of Bergonié and Tribondeau.
12.13	Interpret cell survival curves to determine radiosensitivity under numerous conditions.
12.14	Discuss the relationship of radiation quality and dose to systemic responses.
12.15	Describe radiation syndromes and factors influencing response.
12.16	Differentiate between linear, nonlinear, and threshold and nonthreshold dose response curves.
12.17	Describe the 4 Rs of radiobiology.
12.18	Compare the relationship of time, dose, fractionation, volume, distance and site to radiation effects.
12.19	Discuss the use of radiation response modifiers.
12.20	Describe the influence of chemotherapy and hyperthermia alone and in combination with radiation therapy.
13.0	Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting. -- The student will be able to:
13.01	Define the fundamental units of the English, metric and Système International d'Unites (SI) systems.
13.02	Calculate various unit conversions.
13.03	Demonstrate applications of the general principles that relate to inertia, work, energy and momentum.
13.04	Describe Bohr's theory of atomic structure.
13.05	Compare the characteristics and functions of a proton, neutron and electron.
13.06	Discuss the energy levels of the atom.
13.07	Define the terms relating to atomic nomenclature.
13.08	Compare covalent bonding and ionic bonding.
13.09	Describe the process of ionization.
13.10	Differentiate between the characteristics of a mixture, substance and element.



13.11	Classify the characteristics of an element using the periodic table.
13.12	Compare the characteristics of a molecule and compound.
13.13	Describe the nature of light.
13.14	Explain the relationship between wavelength, frequency and velocity.
13.15	Differentiate between the radiations of the electromagnetic (EM) spectrum.
13.16	Explain the relationship of energy and frequency to Planck's constant.
13.17	Distinguish between electrical charge and electrical field.
13.18	Describe the methods of electrification.
13.19	Explain the laws of electrostatics and their application.
13.20	Describe the properties and laws of magnetism.
13.21	Explain the electronic spin of an element to its potential magnetic properties.
13.22	Describe the principle of magnetic induction.
13.23	Define potential difference, current, resistance, circuit and electric power.
13.24	Compare the characteristics of direct and alternating currents.
13.25	Compare electrical measuring devices.
13.26	Discuss electrical protective devices.
13.27	Discuss the interaction between electric and magnetic fields.
13.28	Describe the characteristics and functions of a cathode and rotating anode.
13.29	Describe the construction and function of tube housing.
13.30	Identify the parts of an x-ray tube.
13.31	Determine heat units and cooling characteristics of x-ray tube housings.
13.32	Propose methods to extend tube life.
13.33	Discuss application and components of automatic exposure devices.

13.34	State the principles of x-ray production.
13.35	Compare the production of bremsstrahlung with the production of characteristic radiations.
13.36	Compare various photon interactions in terms of description of interaction, relation to atomic number and applications.
13.37	Discuss relationships of wavelength and frequency to beam characteristics.
13.38	Define units of radiation measurement and provide an example of its application.
14.0	Demonstrate the principles of radiation protection and safety for the radiation therapist. -- The student will be able to:
14.01	Distinguish between somatic and genetic effects of radiation exposure.
14.02	Differentiate between stochastic and nonstochastic effects of radiation exposure.
14.03	Defend the concept of as low as reasonably achievable (ALARA).
14.04	Discuss the concept of negligible individual risk.
14.05	Describe the legal and ethical radiation protection responsibilities of radiation workers.
14.06	Use appropriate SI terminology and units when discussing radiation protection issues.
14.07	Select the correct SI units of radiation for exposure, absorbed dose, dose equivalence and radioactivity.
14.08	Discuss the interrelationship between relative biological effectiveness and quality factors.
14.09	Explain the theory, operation, applications and limitations of radiation detection devices.
14.10	State the authority, boundaries and regulations of the state and national regulatory agencies.
14.11	Discuss the requirements and responsibilities of the radiation safety officer.
14.12	Compare the various methods used for personnel monitoring.
14.13	State the exposure limits for occupational and nonoccupational individuals.
14.14	Explain techniques used to reduce unnecessary dose to the patient.
14.15	Develop an emergency action plan for equipment failure.
14.16	Discuss the principles of radiation protection room design factors.
14.17	Describe the elements of a radiation protection survey for an inpatient undergoing brachytherapy.

14.18	Calculate exposure doses based on time, distance and type of radioactivity.
14.19	Describe the procedure for the wipe test.
14.20	Describe procedures to receive and ship radioactive materials.
14.21	Evaluate a record keeping system for radioactive sources to ensure inclusion of all required elements.
15.0	Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery. -- The student will be able to:
15.01	Differentiate between the roles and responsibilities of health care team members treating cancer patients.
15.02	Demonstrate applications of professional self-care.
15.03	Examine different psychological aspects of dying.
15.04	Explain the dynamics of communicating with the cancer patient and family.
15.05	Recognize radiation side effects and complications and select the appropriate medical intervention.
15.06	Identify factors that influence a patient's emotional responses.
15.07	Formulate content for answers to questions frequently asked by patients.
15.08	Assess the physical condition of the patient before, during and after treatment delivery.
15.09	Demonstrate application of the principles of health safety.
15.10	Discuss the principles of medication administration.
15.11	Recognize common medications and explain their actions and side effects.
15.12	Evaluate a patient for an adverse reaction to medication.
15.13	Describe emergency response procedures.
15.14	Describe the proper care of patients with tubes.
15.15	Provide patient education for medical procedures.
15.16	Assess the patient before, during and after brachytherapy procedures.
15.17	Demonstrate the application of the principles of radiation protection during brachytherapy procedures.
15.18	Assess the nutritional status of the cancer patient to provide nutritional education or intervention.

15.19	Demonstrate proper use of the principles of patient safety and transfer.
15.20	Provide appropriate patient education following patient assessment.
15.21	Select patient education materials appropriate for patient needs.
15.22	Compare conventional and integrative medicine.
16.0	Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics. -- The student will be able to:
16.01	Compare and contrast atomic structure and composition among the elements, including but not limited to particles (their location, energy level, and charge), atomic number and mass number.
16.02	Compare isotope, isotone, isobar and isomer.
16.03	Discuss nuclear stability and types of radioactive decay.
16.04	Categorize the four fundamental forces of nature.
16.05	Differentiate between electromagnetic (EM) radiation and their characteristics.
16.06	Describe the processes of ionization and excitation.
16.07	Calculate radioactivity, decay constant, activity and half-life, average life and attenuation requirements for commonly used isotopes in radiation therapy.
16.08	Differentiate between artificially produced and naturally occurring therapeutic nuclides.
16.09	Identify the radioactive series and the decay schemes for commonly used radiation therapy nuclides.
16.10	Explain the various forms of radioactive equilibrium.
16.11	Identify nuclear reactions by recognizing the projectile and radiation emitted.
16.12	Define fission and fusion.
16.13	Discuss the activation of nuclides in terms of yield, probability, activity growth, and saturation activity.
16.14	Describe methods of artificial production of radionuclides.
16.15	Describe x-ray production for linear accelerators.
16.16	Compare and contrast the factors that influence x-ray production and output.
16.17	Compare and contrast the energy ranges and characteristics of the various radiation therapy modalities (Grenz-ray through megavoltage).
16.18	Discuss all components and function in a linear accelerator.

16.19	Discuss methods of x-ray production in alternate therapy units (e.g., tomotherapy, stereotactic radiosurgery, etc.)
16.20	Compare the characteristics of other radiation therapy beams (cyclotron and other accelerated particles).
16.21	State the gamma energies and average gamma energy of cobalt 60 ( $^{60}\text{Co}$ ).
16.22	Compare the characteristics of an isotope beam and an x-ray beam.
16.23	Explain linear energy transfer (LET).
16.24	Compare photon interactions with matter and classify radiations produced by direct and indirect ionization.
16.25	Explain major influencing factors of photon beam attenuation.
16.26	Describe the parameters of narrow beam geometry used in the measurement of attenuation.
16.27	Plot heteroenergetic and monoenergetic beam attenuation data.
16.28	Calculate half-value layer (HVL).
16.29	Calculate the homogeneity coefficient.
16.30	Calculate attenuation requirements for beam modification devices.
16.31	Discuss activation of clinical accessories and alternate shielding materials due to photodisintegration.
16.32	Explain charged particle interactions with matter, describing dose deposition, energy loss and shielding requirements.
16.33	Define mass stopping power.
16.34	Describe a Bragg curve.
16.35	Discuss the purpose and importance of the National Institute of Standards and Technology (NIST).
16.36	Discuss the purpose and importance of the Accredited Dosimetry Calibration Labs (ADCL).
16.37	Demonstrate use of the appropriate type of radiation detector for given clinical applications.
16.38	Calculate correction factors for chamber calibration, temperature, pressure and other factors used to correct a chamber reading.
16.39	Discuss protocols used for external beam calibration.
16.40	Analyze spot check data to make appropriate judgment decisions regarding machine treatment parameters. Describe the quality of a gamma-ray ( $\gamma$ ) beam in terms of HVL, $\gamma$ energy or mean $\gamma$ energy/nuclide of origin.
16.41	Describe beam filtration for the various external beam modalities, including but not limited to purpose, types of filters and their construction, energy considerations, inherent vs. added filtration and effect on HVL.

16.42	Calculate the approximate mean energy of a megavoltage beam.
16.43	Compare absorbed dose vs. exposure.
16.44	Discuss the relationship between kinetic energy released in the medium (KERMA), exposure and absorbed dose.
16.45	Calculate air dose to absorbed dose conversions in tissue, including but not limited to, energy considerations, applicable conversion factors, necessary instrumentation and methods.
16.46	Discuss the clinical importance of phantom material and size when applying the Bragg-Gray Cavity Theory.
16.47	Critique how dose distribution measured in a phantom is used to predict dose distribution in a patient.
16.48	Compare the characteristics and composition of various phantoms.
16.49	Compare source-skin distance (SSD) and isocentric methods of calibration.
17.0	Demonstrate proficiency in research methods and information literacy. -- The student will be able to:
17.01	Analyze research articles to determine the accuracy and validity of findings.
17.02	Integrate information literacy concepts into a research project.
17.03	Critique research projects to determine appropriateness and usefulness to the profession.
18.0	Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy. -- The student will be able to:
18.01	Relate the importance of imaging with computed tomography, magnetic resonance and PET-CT in radiation therapy.
18.02	Differentiate between sagittal, coronal and axial planes of the body.
18.03	Review the principles of imaging for imaging modalities using relevant terminology.
18.04	Compare the imaging modalities for application to radiation therapy.
18.05	Identify normal anatomical structures on sectional images.
18.06	Identify topographic anatomy used to locate underlying internal structures.
18.07	Describe image formation and orientation for computed tomography, magnetic resonance, positron emission tomography, ultrasonography, and image fusion.
19.0	Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment. -- The student will be able to:
19.01	Compare photon isodose curves for clinically relevant photon beams.
19.02	Describe the general influencing factors that distinguish various isodose curves.

19.03	Determine internal and external patient factors that influence a beam's distribution and apply isodose correction methods.
19.04	Describe methods of determining a patient's external contour, definition of internal structures and volumes of interest used in treatment planning.
19.05	Identify organs and tissues at risk and their dose limitations using published tolerance dose tables.
19.06	Describe how biologic effective dose is influenced by prescription and treatment variables.
19.07	Compare fractionation schemes.
19.08	Discuss the integral dose concept.
19.09	Use appropriate factors for treatment calculations.
19.10	Describe the interrelationships of the various factors used in treatment calculations.
19.11	Perform dose calculations for external photon and electron beam treatments for all clinical variations.
19.12	Calculate the absorbed dose to off-axis points of interest.
19.13	Compare absorbed doses within a treatment volume with beam variations.
19.14	Explain algorithms incorporated into treatment planning computers.
19.15	Describe the clinical applications for moving beam techniques.
19.16	Describe the past pointing technique.
19.17	Calculate equivalent squares using various methods and consider the limitations of each.
19.18	Describe the effect of asymmetric beam collimation on dose distribution.
19.19	Describe methods for determining dose distribution at points outside the treatment field.
19.20	Calculate dose under a block.
19.21	Evaluate a variety of treatment plans for clinical use.
19.22	Identify all possible techniques that may be employed to clinically match adjacent fields.
19.23	Describe the multiple junction shift methods.
19.24	Examine hot and cold regions that occur with the various matching methods, and describe the methods used to eliminate them.
19.25	Describe procedures for permanent record and legal documentation of matching fields.

19.26	Analyze dose distributions to determine the need for beam modifiers.
19.27	Compare various methods of tissue compensation and the dosimetric impact.
19.28	Examine the fabrication of 2-D and 3-D compensators.
19.29	Construct manual and computerized isodose curves.
19.30	Differentiate between isodose distributions for all clinical variations.
19.31	Evaluate possible corrections for treatment errors to correct misadministration of prescribed dose.
19.32	Differentiate between the treatment planning terms: maximum, minimum, mean, modal and median dose.
19.33	Describe International Commission on Radiological Units (ICRU) recommendations on dose variance within a target volume and the effect that variances may have on cure rates, local control and tolerance.
19.34	Analyze dose volume histograms relative to treatment planning.
19.35	Evaluate patient changes to determine the integrity of a treatment plan.
19.36	Compare electron beam depth dose characteristics for various energies.
19.37	Identify clinical factors that would influence beam type and energy selection.
19.38	Differentiate between standard treatment distance and virtual distance.
19.39	Discuss why equivalent squares used with photon beams are inappropriate with electron beams.
19.40	Describe how inhomogeneities influence electron beam path.
19.41	Discuss the considerations of matching an electron field to other adjacent photon or electron fields.
19.42	Analyze which shielding materials and thickness would be needed to attenuate electron beams to appropriate levels.
19.43	Describe how electron shielding materials should be arranged for external vs. internal shielding.
19.44	Discuss changes in dose rate and dose distribution with changes in blocking and electron energy.
19.45	Compare calculations of shielding thicknesses to measured data for electron beams.
19.46	Determine why specific isodose lines are prescribed for various clinical situations involving critical and noncritical structures.
19.47	Calculate percentage depth dose for 10%, 50%, 80% and 90% lines for various electron energies.
19.48	Describe the considerations in the clinical application of special electron treatments, including total skin irradiation and arc therapy.



19.49	Compare the general isodose pattern of particle beams.
19.50	Determine clinical usefulness of various beam types and the clinical implications involved.
19.51	Describe the various imaging modalities in tumor localization and planning.
19.52	Discuss planning techniques used to accommodate the treatment volume shape.
19.53	Discuss isocenter localization for radiosurgery.
19.54	Identify vital structures considered during treatment planning.
19.55	Compare single dose delivery to fractionated dose delivery schedules.
19.56	Discuss the need for specific equipment used to deliver radiation for conformal therapy.
19.57	Discuss the purpose and contents of the ICRU Report 62 and supplements.
19.58	Discuss the computer system features necessary for conformal therapy treatment planning.
19.59	Identify common sites amenable to conformal therapy and the typical doses employed for those sites.
19.60	Compare configurations of multileaf collimation systems.
19.61	Discuss considerations for multileaf collimators.
19.62	Review the differences between static and dynamic multileaf collimation systems.
19.63	Identify appropriate clinical applications for brachytherapy.
19.64	Compare and contrast brachytherapy delivery systems.
19.65	Describe the techniques and applicators used for intracavitary, interstitial and endovascular brachytherapy procedures.
19.66	Explain how simulation and CT data is used for source localization.
19.67	Discuss the objective of treatment planning for brachytherapy procedures.
19.68	Summarize dose specification and prescription techniques for different types of implants.
19.69	Describe optimization techniques used in computer aided dose calculations.
19.70	Discuss record keeping requirements for radioactive material.
19.71	State radiation safety requirements for brachytherapy procedures.

19.72 Identify appropriate clinical applications for using intensity modulated radiation therapy (IMRT).

19.73 Describe the general flow of the IMRT process from patient immobilization through treatment delivery.

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## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical education has been established for the students in these programs. It is designed to permit accurate assessment of the knowledge, skills and abilities of students in the clinical education component of the program. After completion of the prerequisite practice of radiotherapeutic procedures, students indicate readiness for evaluation in a specific category to the clinical affiliate or faculty in the assigned clinical education center.

Clinical education and laboratory activities facilitate student rotations to provide them equitable opportunity to achieve the program clinical objective utilizing multiple affiliates. The resulting clinical rotation and laboratory practicum provides students with patient treatment techniques utilizing a variety of megavoltage equipment, radiation therapy patient care procedures, localization and treatment, radiation therapy physics including dosimetry, machine calibration, quality assurance, handling of sealed radioactive sources and protection, follow up, patient care and patient recordkeeping.

### **Special Notes**

The program is designed to provide the radiation therapy community with workers who, under the supervision of a Radiation Oncologist, uses ionizing radiation to treat disease. The curriculum provides students an opportunity to develop technical and social skills through experiences in the clinic, classroom, and laboratory.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students are encouraged to become members of their appropriate professional organizations such as the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Radiation Therapy Specialist (0351090703) – 43 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**        **Respiratory Care**  
**Career Cluster:**     **Health Science**

**AS**

CIP Number	1351090800
Program Type	College Credit
Standard Length	76 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-1126 Respiratory Therapists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program trains students for the occupation of Respiratory Therapist (SOC Code 29-1126) or to provide supplemental training for persons previously or currently employed in these occupations. The respiratory therapist specializes in the application of scientific knowledge and theory to practical, clinical problems of respiratory care.

The content includes but is not limited to quality control of all units, intermittent positive pressure breathing (IPPB); humidity/aerosol therapy; medical gas administration; broncho-pulmonary drainage; mechanical ventilation; airway management; emergency care; pulmonary function testing; cardiopulmonary rehabilitation; measurement and reporting of cardiopulmonary sampling, infection control; cardiopulmonary drug administration, physiologic monitoring, and special advanced procedures.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 76 credit hours.

## **Regulated Programs**

Graduates of this program are eligible to take the NBRC (National Board of Respiratory Care) examination(s) and become licensed with the State of Florida Department of Health, Division of Quality Assurance.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Recognize and practice safety and security procedures.
- 02.0 Recognize and practice infection control procedures.
- 03.0 Select, review, obtain and interpret data.
- 04.0 Select, assemble, and check equipment for proper function, operation and cleanliness.
- 05.0 Initiate, conduct, and modify prescribed therapeutic procedures.
- 06.0 Demonstrate knowledge of the health care delivery system, maintain records and communications.
- 07.0 Demonstrate legal and ethical responsibilities.
- 08.0 Demonstrate knowledge of employment requirements as a respiratory care professional.
- 09.0 Adapt appropriate respiratory care procedures to the home care environment.
- 10.0 Perform advanced respiratory care procedures.
- 11.0 Administer cardiopulmonary drugs.
- 12.0 Assist the physician with special respiratory therapy procedures.
- 13.0 Initiate and conduct patient and family education.

Florida Department of Education  
 Student Performance Standards

Program Title:       Respiratory Care  
 CIP Number:        1351090800  
 Program Length:    76 credit hours  
 SOC Code(s):       29-1126

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Recognize and practice safety and security procedures. – The student will be able to:
01.01	Recognize safe and unsafe working conditions and report safety hazards.
01.02	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
01.03	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.
01.04	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
01.05	Demonstrate proper body mechanics and ergonomics.
01.06	Demonstrate the procedure for properly identifying patients.
01.07	Demonstrate procedures for the safe transport and transfer of patients.
01.08	Describe fire, safety, disaster and evacuation procedures.
02.0	Recognize and practice infection control procedures. – The student will be able to:
02.01	Define principles of infection control including standard and transmission based precautions.
02.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
02.03	Demonstrate knowledge of surgical asepsis.
02.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.
02.05	Apply infection control techniques designed to prevent the spread of diseases caused by airborne and blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.
03.0	Select, review, obtain and interpret data. – The student will be able to:

<p>03.01 Review existing data in patient record, and recommend diagnostic procedures based on all available patient information.  03.01.01 Review existing data in patient record including imaging and laboratory studies  03.01.02 Recommend procedures to obtain additional data.</p>
<p>03.02 Collect and evaluate additional pertinent clinical information.  03.02.01 Assess the patients overall cardiopulmonary status by inspection, percussion, palpation and auscultation.  03.02.02 To include laboratory and imaging studies.</p>
<p>03.03 Perform procedures and interpret results.  03.03.01 Perform and/or interpret results of bedside procedures.</p>
<p>03.04 Determine the appropriateness of the prescribed respiratory care plan, recommend modifications where indicated, and participate in the development of the respiratory care plan with established guidelines.  03.04.01 Review planned therapy to establish therapeutic goals.  03.04.02 Determine appropriateness of prescribed therapy and goals for identified pathophysiological state.  03.04.03 Recommend changes in therapeutic plan (based on data) if indicated.  03.04.04 Participate in development of respiratory care plan.</p>
<p>04.0 Select, assemble, and check equipment for proper function, operation and cleanliness. – The student will be able to:</p>



- 04.01 Select and obtain equipment, assure cleanliness of equipment, assemble, check for proper function, identify malfunctions of equipment, and take action to correct malfunctions of equipment appropriate to the respiratory care plan which includes the following:
  - 04.01.01 Oxygen administration devices
  - 04.01.02 High flow and heated high flow oxygen devices
  - 04.01.03 Humidifiers.
  - 04.01.04 Aerosol generators.
  - 04.01.05 Ventilators; invasive and non-invasive.
  - 04.01.06 Artificial airways.
  - 04.01.07 Laryngeal mask and supraglottic airways
  - 04.01.08 Suctioning devices.
  - 04.01.09 Gas delivery, metering, and clinical analyzing devices.
  - 04.01.10 Manometers and gauges.
  - 04.01.11 Resuscitation devices.
  - 04.01.12 Hyperinflation/lung expansion devices.
  - 04.01.13 Patient breathing circuits.
  - 04.01.14 Metered dose inhalers (MDI) and spacers.
  - 04.01.15 Dry powder inhalers (DPI)
  - 04.01.16 Airway Clearance devices/ bronchial hygiene
  - 04.01.17 Specialty medical gases such as heliox.
  - 04.01.18 Pleural drainage devices
  - 04.01.19 Bronchoscopy Devices
  - 04.01.20 Noninvasive monitoring equipment
  - 04.01.21 Intubation equipment
  - 04.01.22 Invasive monitoring equipment
  - 04.01.23 Pulmonary Function Testing equipment

04.02	Demonstrate a general knowledge of the following: 04.02.01 Bronchoalveolar lavage (BAL) and related devices 04.02.02 Specialty medical gasses such as nitric oxide
05.0	Initiate, conduct, and modify prescribed therapeutic procedures. – The student will be able to:
05.01	Explain planned therapy and goals to patients; maintain records and communication; and protect patient from nosocomial infection. 05.01.01 Explain planned therapy and goals to patient in understandable terms to achieve optimal therapeutic outcome. 05.01.02 Maintain records and communication. 05.01.03 Protect patient from nosocomial infection by adherence to infection control policies and procedures (standard precautions, blood and body fluid precautions, etc.).
05.02	Conduct therapeutic procedures to stabilize and maintain a patent airway, including the care of artificial airways; and removal of bronchopulmonary secretions. 05.02.01 Establish and maintain a patients' airway. 05.02.02 Perform removal of bronchopulmonary secretions. 05.02.03 Understand function and application of speaking valves.
05.03	Conduct therapeutic procedures to achieve adequate spontaneous and artificial ventilation. 05.03.01 Instruct in proper breathing techniques. 05.03.02 Instruct and monitor techniques of Hyperinflation/lung expansion. 05.03.03 Instruct and monitor techniques of airway clearance devices. 05.03.04 Administer/assist with directed cough (quad cough/huff cough). 05.03.05 Administer prescribed aerosolized medications. 05.03.06 Select appropriate ventilator including both conventional and non- conventional (i.e. high frequency ventilation). 05.03.07 Select, initiate and adjust invasive ventilation device and properly manipulate settings based on patient response and data. 05.03.08 Select, initiate and adjust non-invasive ventilation device and properly manipulate settings based on patient response and data. 05.03.09 Manage liberation from mechanical ventilation. 05.03.10 Manage Withdrawal of life support. 05.03.11 Interpret invasive ventilator graphics and manipulate settings accordingly. 05.03.12 Interpret non-invasive ventilator graphics and manipulate settings accordingly. 05.03.13 Assist with the transport of a mechanically ventilated patient.
05.04	Conduct therapeutic procedures to achieve adequate arterial and tissue oxygenation. 05.04.01 Position patient to minimize hypoxia. 05.04.02 Administer oxygen (on or off ventilator). 05.04.03 Prevent procedure-associated hypoxia (e.g. oxygenated before and after suctioning and equipment change, etc.). 05.04.04 Initiate and adjust CPAP/PEEP therapy. 05.04.05 Initiate lung recruitment maneuvers.

- 05.05 Evaluate and monitor patient's response to respiratory care through accurate interpretation of monitored data.
  - 05.05.01 Measure and record vital signs.
  - 05.05.02 Monitor cardiac rhythm.
  - 05.05.03 Non-Invasive monitors
    - 05.05.03.1 Monitor pulse oximetry.
    - 05.05.03.2 Monitor capnography.
    - 05.05.03.3 Monitor Transcutaneous gas exchange
  - 05.05.04 Auscultate chest and record changes.
  - 05.05.05 Observe changes in sputum production and consistency.
  - 05.05.06 Note patient's subjective response to therapy.
  - 05.05.07 Measure FIO2 and or liter flow.
  - 05.05.08 Perform Pulmonary Function Testing
    - 05.05.08.1 Bedside spirometry
    - 05.05.08.2 Peak flow
    - 05.05.08.3 6-minute walk
    - 05.05.08.4 FeNO measurement
    - 05.05.08.5 DLCO measurement
    - 05.05.08.6 Nitrogen washout
    - 05.05.08.7 Lung volumes and capacities
    - 05.05.08.8 MEP and MIP
  - 05.05.09 Perform arterial puncture.
  - 05.05.10 Interpret results of arterial blood gas analysis and co-oximetry.
  - 05.05.11 Adjust and check alarm systems.
  - 05.05.12 Note patient's response to mechanical ventilation.
  - 05.05.13 Measure appropriate mechanical ventilation parameters.
  - 05.05.14 Monitor endotracheal or tracheostomy tube cuff pressure.
- 05.06 Make necessary modifications in therapeutic procedures and recommend respiratory care plan modifications based on patient response.
  - 05.06.01 Terminate treatment based on patient's adverse reaction to therapy being administered.
  - 05.06.02 Modify bronchial hygiene/airway clearance.
  - 05.06.03 Modify management of artificial airways.
  - 05.06.04 Modify Hyperinflation/lung expansion devices.
  - 05.06.05 Modify aerosol therapy.
  - 05.06.06 Modify oxygen therapy.
  - 05.06.07 Modify suctioning.
  - 05.06.08 Modify mechanical ventilation.
  - 05.06.09 Recommend modifications in the respiratory care plan based on the patient's response.
- 05.07 Initiate, conduct, or modify respiratory care techniques in an emergency setting as prescribed by the American Heart Association guidelines.
- 05.08 Evaluate and respond to emergent loss of artificial airway.

05.09	Demonstrate an understanding of special airway management situations, such as surgical alterations of the airway, and adjust response as appropriate.
05.10	Utilize Evidence-Based Practice when classification of disease severity and implementing treatment plan.
05.10.01	ARDSNet – lung protective strategies
05.10.02	NAEPP
05.10.03	GOLD
06.0	Demonstrate knowledge of the health care delivery system, maintain records and communications. – The student will be able to:
06.01	Describe the various types of healthcare providers.
06.02	Identify the general roles and responsibilities of the individual members of the healthcare team.
06.03	Use computer system to access and input patient data, when appropriate.
06.04	Chart on medical record; record therapy and results using conventional terminology as required by hospital policy and regulatory agencies.
06.05	Be familiar with and use departmental policy and procedure manual; actively participate in recommending updates.
06.06	Consistently display a professional and positive attitude in all communications.
06.07	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
06.08	Participate and communicate as part of the interdisciplinary team.
06.08.01	Demonstrate appropriate oral and written communication skills.
06.09	Display respect for patients regardless of ethnicity, religion, cultural, creed, gender, sexual orientation, age, or diagnosis.
06.10	Adapt communication skills to varied levels of understanding and cultural orientation including ethnicity, religion, cultural, creed, gender, sexual orientation, age, diagnosis, and preferred learning style.
06.11	Maintain confidentiality of all patient records and information.
06.12	Distinguish between and report subjective and objective information.
07.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
07.01	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment, and fraud.
07.02	Explain the “Patient’s Bill of Rights”.
07.03	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
07.04	Describe advance directives.
07.05	Describe different forms of consent including implied, informed, and expressed.

07.06	Recognize and report illegal and/or unethical practices of healthcare workers.
07.07	Understand the proper laws and procedures for reporting suspected abuse and neglect in Florida.
08.0	Demonstrate knowledge of employment requirements as a respiratory care professional. – The student will be able to:
08.01	Identify the requirements to become licensed in Florida and maintenance of the license.
08.02	Identify National Board of Respiratory Care credential maintenance and membership requirements to maintain credentials.
08.03	Identify the Laws and Rules related to the Florida Respiratory Care Practice Act.
08.04	Discuss patient safety goals and any other applicable accrediting/regulatory agency guidelines.
09.0	Adapt appropriate respiratory care procedures to the home care environment. – The student will be able to:
09.01	Provide for oxygen administration, aerosol and bronchial hygiene therapy and hyperinflation/lung expansion therapy in the home.
09.02	Coordinate with the interdisciplinary team in arranging life support and monitoring (i.e. mechanical ventilation, apnea monitoring, nasal CPAP) in the home.
09.03	Instruct patient, family and other healthcare workers on the appropriate use, operation, cleaning, and maintenance of respiratory care equipment.
09.04	Perform patient monitoring and assessment in the home.
10.0	Perform advanced respiratory care procedures. – The student will be able to:
10.01	Assume primary clinical responsibility for all respiratory care modalities.
10.02	Check physicians' orders or consult with physician.
10.03	Design and implement respiratory care plan as appropriate.
10.04	Perform noninvasive monitoring techniques as appropriate.
10.05	Remove, clean and/or replace inner cannula tube and/or replace tracheostomy tube, as indicated.
10.06	Perform various mathematical computations dealing with cardiopulmonary assessment.
10.07	Evaluate and apply hemodynamic monitoring to enhance care of the patient.
10.08	Perform intubation.
10.09	Initiate mechanical ventilation with appropriate ventilator settings and parameters.
10.10	Monitor return to normal physiology; reestablish airway/ventilation if necessary.

10.11	Perform extubation and/or ventilator liberation.
10.12	Monitor and assist in procedural sedation.
11.0	Administer cardiopulmonary drugs. – The student will be able to:
11.01	Demonstrate knowledge of drug classifications, actions and uses, route of administration and usual adult doses, mathematics needed to calculate divided or children’s dosage, contraindications, drug interactions, adverse reactions, how supplied, mixing instructions, storage, laboratory test interferences.
11.02	Perform administration of medication following appropriate protocol and safe guidelines.
12.0	Assist the physician with special respiratory therapy procedures. – The student will have the knowledge of:
12.01	Insertion and maintenance of an umbilical arterial and/or venous catheter.
12.02	Thoracentesis, chest tube insertion, tracheostomy, intubation and cardioversion.
12.03	Cardiopulmonary stress testing.
13.0	Initiate and conduct patient and family education. – The student will be able to:
13.01	Demonstrate knowledge of smoking cessation products, techniques and programs.
13.02	Educate the patient and family in relevant safety and infection control procedures and techniques.
13.03	Educate the patient and family on the importance of pulmonary rehabilitation and their role.
13.04	Educate the patient and family in disease management techniques for cardiopulmonary diseases.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The respiratory therapist may be required to exercise considerable independent, clinical judgment in the respiratory care of patients under the direct or indirect supervision of a physician. Further, the therapist is capable of serving as a technical resource person to the physician with regard to current practices in respiratory care, and to the hospital staff as to effective and safe methods for administering respiratory therapy.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.



**Florida Department of Education  
Curriculum Framework**

**Program Title:** Surgical First Assisting  
**Career Cluster:** Health Science

**AS**

CIP Number	1351090900
Program Type	College Credit
Standard Length	74 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as a Surgical First Assistant Expanded Function (Surgical technologists is SOC 29-2055).

The content includes, but is not limited to, communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, basic computer literacy and surgical first assistant skills such as preoperative duties, aid in exposure, hemostasis, closure, intraoperative technical functions, and postoperative duties under the direction and supervision of the surgeon.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 74 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate central sterile processing skills.
- 13.0 Demonstrate competencies in the core components of the surgical first assistant related to communication and interpersonal skills
- 14.0 Demonstrate an understanding of the basic sciences related to surgical first assisting.
- 15.0 Describe and practice safety measures in the surgical environment.
- 16.0 Perform patient care procedures related to the surgical environment and describe methods for meeting patient's needs.
- 17.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.
- 18.0 Demonstrate knowledge of the basic surgical skills necessary to function safely and effectively.
- 19.0 Demonstrate competencies in the core components of the surgical first assistant related to knowledge and skills.
- 20.0 Demonstrate competencies in the core components of the surgical first assistant related to legal and ethical responsibilities.
- 21.0 Demonstrate advanced skills competency regarding professional managerial skills.
- 22.0 Demonstrate the ability to analyze communication critically in the general education components of the program.
- 23.0 Demonstrate competency in critical reflection related to the human condition, interpretive abilities, cultural literacy in the general education components of the program.
- 24.0 Demonstrate the ability to apply mathematical concepts and mathematical/computational models and methods in problem solving in the general education components of the program.
- 25.0 Demonstrate the ability to examine behavioral, social, and cultural issues from a variety of points of view.

Florida Department of Education  
Student Performance Standards

**Program Title:** Surgical First Assisting  
**CIP Number:** 1351090900  
**Program Length:** 74 credit hours  
**SOC Code(s):** 29-2055

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Demonstrate central sterile processing skills. -- The student will be able to:
12.01	Apply the principles of medical/surgical asepsis including attire, environmental control and traffic patterns to control and manage dirty, clean and sterile areas of the operating room and central supply.
12.02	Identify relevant federal, state and local guidelines, standards and regulations.
12.03	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, reaching, and other work related activities.
12.04	Describe the methods of disinfection and sterilization.
12.05	Describe the importance of following device, equipment, instrument or supply manufacturer's instructions for decontamination, processing, operation, and troubleshooting.
12.06	Demonstrate correctly decontamination techniques for instruments, equipment and the environment used during surgical procedures.
12.07	Demonstrate appropriate techniques for inspection, testing and sending out for repair instruments, equipment and supplies regarding condition, quantity and quality.
12.08	Describe clean and sterile transportation, restocking, and storage principles for instruments.
12.09	Analyze the results of sterilization process monitors used in sterilization units, sterilizations cycles and ensures documentation meets the safe parameters for each prior to use of an item.
12.10	Describe clean and sterile transportation, restocking, and storage principles for supplies in the facility (receivables, sterile, clean, or contaminated).
12.11	Demonstrates the ability to identify and select appropriate instruments, equipment and supplies for any surgical procedure.

12.12	Demonstrate the ability to prepare and label items for high level disinfection and sterilization as required.
12.13	Demonstrate the techniques of high level disinfection and sterilization for immediate use items.
12.14	Describe various supply distribution and inventory control methods.
12.15	Demonstrate case cart preparation and management.
13.0	Demonstrate competencies in the core components of the surgical first assistant related to communication and interpersonal skills -- The student will be able to:
13.01	Demonstrate proper use of communication systems.
13.02	Use various forms of communication in the role of Surgical First Assistant to communicate relevant, accurate and complete information in a concise and clear manner.
13.03	Collaborate with the patient, surgeon, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's surgical care to promote positive outcomes including the use of preoperative checklists and preoperative assessment and evaluations methods.
13.04	Demonstrate patient interviewing techniques.
13.05	Demonstrate the ability to analyze and communicate specific patient care factors or needs and the surgeon's preferences to the surgical team including suture needs, specialty supplies and instrumentation, and equipment.
13.06	Describe the concepts of conflict resolution, assertive behavior and the principles of teamwork as a patient advocate and assistant to the surgeon.
13.07	Demonstrate competency regarding reporting and documentation responsibilities in the clinical setting.
13.08	Employ leadership skills to accomplish organizations goals and objectives.
13.09	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
13.10	Conduct and participate in meetings to accomplish work tasks.
13.11	Employ mentoring skills to inspire and teach others.
14.0	Demonstrate an understanding of the basic sciences related to surgical first assisting.--The student will be able to:
14.01	Apply knowledge of the microbial environment to the surgical care of the patient.
14.02	Analyze patient defense mechanisms, the chain of infection and the infectious process as related to surgical practice and the prevention of surgical site infections.
14.03	Correlate wound classifications and wound healing principles with wound management guidelines and complications.
14.04	Demonstrate infection and disease transmission control techniques following the Center for Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) guidelines for surgery.
14.05	Describe the causes, clinical signs and symptoms and prevention measures for surgical infections.

14.06	Describe the basic composition, principles, clinical signs and symptoms regarding electrolytes and fluid balance including the mechanism of hypovolemic, septic, hemorrhagic and cardiogenic shock.
14.07	Correlates the principles and disorders of hematology, hemostasis, types of blood components, and coagulation with hemostasis in surgery.
14.08	Discuss the principles of information technology, electricity, and robotics as they relate to surgery.
15.0	Describe and practice safety measures in the surgical environment.--The student will be able to:
15.01	Inspect emergency equipment and supplies for condition and quantity.
15.02	Implement appropriate Joint Commission patient safety goals.
15.03	Demonstrate appropriate safety measures to prevent operating room fires and electrical shock from equipment.
15.04	Apply knowledge of surgical hazards to safe patient care.
15.05	Demonstrate the safe inspection and utilization of laser, electrical, endoscopic, and robotic equipment.
15.06	Describe and practice appropriate safety measures for laser, electrical, endoscopy and robotic surgery.
15.07	Describe the role preventive maintenance, prevention, correction, and documentation plays in patient and personnel safety and the prevention of medical errors in the surgical setting.
15.08	Explain the purpose of Florida's "Right to Know" law and its provisions.
15.09	Describe the role of the surgical technologist and surgical first assistant in an emergency patient situation.
15.10	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.
15.11	Describe the preparation and planning, detection and communication, incident management and support systems, safety and security, clinical/public health assessment and intervention, contingency, continuity and recovery and the public health law and ethics of All-Hazards Preparation for disasters.
15.12	Conduct technical research to gather information for decision-making.
15.13	List and describe quality control systems and/or practices common to the workplace.
15.14	Employ critical thinking skills independently and in teams to solve problems, resolve conflicts, and make decisions.
16.0	Perform patient care procedures related to the surgical environment and describe methods for meeting patient's needs.--The student will be able to:
16.01	Identify the roles of the members of the surgical team during each phase of surgery.
16.02	Assist surgeon with the perioperative care of the surgical patient.
16.03	Correlate the preoperative examination and preparation process for both surgery and anesthesia with the identification of potential patient factors that may inhibit positive outcomes.

16.04	Describe appropriate review and identification of patient factors regarding the chart including preoperative identification, preoperative checklists, diagnostic tests, lab values and surgical consent.
16.05	Demonstrate safe patient transfer/transportation techniques used in the perioperative setting.
16.06	Monitor OR traffic, placement of sterile tables and ensure steps are taken to reduce microbial fallout.
16.07	Correlate anesthesia monitoring devices, patient complications and interventions with maintaining patient homeostasis.
16.08	Demonstrate the principles of safe positioning, application of safety devices, and restraining patient for surgery correlating the prevention of potential complications with the need for patient stability.
16.09	Demonstrate the selection of the appropriate solution and preparation of the operative site for the surgical procedure.
16.10	Perform steps for Foley catheter insertion and connection to drainage.
16.11	Describe the safe usage of critical instruments, equipment and supplies utilized intraoperatively including the electrosurgical unit, Lasers, Ultrasonic equipment, endoscopy equipment, robotics, insufflators, light sources, microscopes, power tools, suction, tourniquets, etc.
16.12	Demonstrate correctly the connection and operation of essential instruments, equipment and supplies for the surgical procedure.
16.13	Demonstrate correct mathematical skills related to dosage available versus dosage needing when drawing up or administering medications.
16.14	Demonstrate correctly the techniques for injection of local anesthetics.
16.15	Demonstrate knowledge of wound management techniques, including suturing techniques in the operating room, perioperative care of special needs patients, and perioperative assessment of the skin.
16.16	Demonstrate applicable wound management principles including the placement and security of catheters, wound drainage systems, sterile dressings and cast applications.
16.17	Discuss relevant and unique factors regarding postoperative care specific to the procedure.
17.0	Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.--The student will be able to:
17.01	Analyze the terminology the basic concepts of pharmacology and drug administration including pharmacokinetics and pharmacodynamics.
17.02	Describe pharmacological concepts relative to the administration of all anesthesia methods, agents, and techniques including the role of the anesthetist, the first assistant and the circulator during induction and extubation.
17.03	Identify the classification, actions, effects and precautions of common drugs used at the field, and within the surgical environment.
17.04	Apply knowledge of the pharmacologic agents used in the treatment of the surgical patient.
17.05	Describe potential anesthesia and operative complications and interventions for each.
17.06	Demonstrate the application of the six rights of medication administration.

17.07	Identify the correct medication form and method of application.
17.08	Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.
17.09	Pour or receive, measure, prepare and manage sterile solutions accurately within the sterile field.
17.10	Demonstrate the appropriate methods of transferring and accepting medications onto the sterile field.
17.11	Label properly all fluids and medications used within the sterile field.
17.12	Demonstrates ability to correctly calculate common medication conversions and dosages.
17.13	Apply correct unit of measure for each medication.
17.14	Demonstrates preparation and passing of medication mixtures using ratio and proportions correctly.
17.15	Maintains an accurate account of the amount of each medication and/or solution used at the field and notifies circulator as appropriate to the situation to ensure accurate documentation.
17.16	Describe the adverse effects of local and topical anesthetics.
18.0	Demonstrate knowledge of the basic surgical skills necessary to function safely and effectively.--The student will be able to:
18.01	Demonstrate an understanding of advanced anatomy, physiology, the disease processes and the relationship of the processes to the specific types of pathologies according to body systems.
18.02	Correlate the preoperative diagnosis, diagnostic interventions, common complications, and operative pathophysiology relative to specific surgical procedures.
18.03	Correlate the preoperative diagnosis, operative anatomy, physiology and pathology, usual incision, wound closure techniques, medications utilized, common complications, and the usual sequence as related to specific surgical procedures.
18.04	Select and verify required instrumentation, equipment and supplies, including any implants needed for specific surgical procedures using core knowledge and the applicable surgeon preference/procedure cards.
18.05	Demonstrate an understanding of diagnostic images as related to surgical anatomy.
18.06	Demonstrate application of aseptic and sterile technique principles including the appropriate corrective action for common breaks in sterile technique that may occur.
18.07	Demonstrate the surgical scrub and donning of sterile gown and gloves.
18.08	Demonstrate the principles of sterile draping.
18.09	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).
18.10	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).
18.11	Prepare, pass, utilize, and monitor sharps, sutures, ligatures, ties and staples correctly.

18.12	Prepare, pass, utilize, and monitor amount given for medications and solutions utilized on the sterile field.
18.13	Demonstrate assisted gowning/gloving for others.
18.14	Participate in the surgical time out to prevent wrong site surgery and delays in the surgical procedure.
18.15	Select, prepare, pass, and utilize instruments, equipment, tissue replacement materials, implants and supplies efficiently.
18.16	Monitor the surgical site regarding counted items, stage of surgery, tissue appearance and patient's body fluids, e.g. blanching, desiccation, color of blood, blood loss, bile leaks, ascites, etc.
18.17	Demonstrate correctly the initiation and completion of counts regarding sponges, sharps, instruments and miscellaneous items used within the patient's wound to prevent foreign body retention.
18.18	Describe the types of incisions, methods of wound closure, and mechanisms of wound management.
18.19	Describe the usual sequence of a common surgical procedure. (I.e. incision into the anatomy, dissection of the anatomy, operative steps of the procedure, and closing of the anatomy).
18.20	Selects the appropriate instrument, equipment, or supply for each step of the procedure.
18.21	Demonstrate ability to prepare, validate, handle and preserve specimen accurately for laboratory analysis.
18.22	Demonstrates knowledge of and assists with surgical procedures while functioning in the roles of scrub and assistant circulator.
18.23	Demonstrate effective perioperative case management ensuring cost control and time/motion economy methods are utilized to maximize the efficiency of the OR team.
19.0	Demonstrate competencies in the core components of the surgical first assistant related to knowledge and skills.-- The student will be able to:
19.01	Prioritize care or actions to be taken in a given circumstance to expedite the operative procedure or emergency situation.
19.02	Describe preoperative diagnosis, common complications, operative pathophysiology and postoperative care related to the specific surgical procedures performed.
19.03	Analyze common patient assessments including skin and chart review relating relevant diagnostic and monitoring results to the surgeon as applicable to the surgical specialty.
19.04	Demonstrate preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, application of tourniquet, surgical skin preparation, catheterization, draping, and sterile setup preparation.
19.05	Demonstrate and describe types of incisions and insertion of trocars.
19.06	Identify types of tissue, organs, and gross anatomical structures correctly during surgical procedures.
19.07	Demonstrate appropriate tissue handling techniques including the care of the surgical specimens.
19.08	Provide appropriate exposure and visualization of the operative field for the surgeon.
19.09	Describe the appropriate sequence for common surgical procedures.



19.10	Utilize appropriate techniques to assist with hemostasis.
19.11	Demonstrate appropriate safe surgical techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known surgical hazard.
19.12	Participate in volume replacement or autotransfusion techniques and medication administration as appropriate.
19.13	Select appropriate instruments and supplies for the type of tissue.
19.14	Demonstrate competence with technology, the use of instruments, equipment supplies and medications for the surgical procedure.
19.15	Use surgical instruments skillfully in ways consistent with their design and purpose.
19.16	Utilize appropriate techniques to assist with the closure of body planes.
19.17	Select and apply appropriate wound dressings.
19.18	Assist surgeon in securing drainage systems to tissue.
19.19	Evaluate patient and report appropriately any abnormal condition found post-op related to positioning.
19.20	Assist surgeon with postoperative care of the patient to facilitate proper patient care.
19.21	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, surgical misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and exposure, retraction and compression injuries.
19.22	Facilitate the continuity of care within and across the healthcare settings to access available resources and services.
20.0	Demonstrate competencies in the core components of the surgical first assistant related to legal and ethical responsibilities. --The student will be able to:
20.01	State methods, standards and aids that assist a surgical first assistant with interpreting and following legal responsibilities.
20.02	Describe the importance of maintaining credentials and following the appropriate credentialing policy in accordance with hospital policy and appropriate laws and regulations.
20.03	Explain the job requirements.
20.04	Describe the key elements related to the development of a surgical conscience.
20.05	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as a surgical assistant, and the professional skills necessary to fulfill the role.
20.06	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.
20.07	Describe the principles of problem solving and confidentiality in ethical decision making and risk management.
21.0	Demonstrate advanced skills competency regarding professional managerial skills. The student will be able to:

21.01	Demonstrate the ability to communicate effectively during mock briefing and debriefing exercises.
21.02	Analyze the potential risks and errors found in healthcare and methods to prevent those risks.
21.03	Describe the mechanism of change, policy formation and implementation.
21.04	Describe the process of performance appraisal.
21.05	Describe how to promote positive patient outcomes through effective followership and leadership.
22.0	Demonstrate the ability to analyze communication critically in the general education components of the program. The student will be able to:
22.01	Demonstrate the ability to communicate effectively.
22.02	Demonstrate the ability to analyze communication critically.
23.0	Demonstrate competency in critical reflection related to the human condition, interpretive abilities, cultural literacy in the general education components of the program. The student will be able to:
23.01	Confirm the ability to think critically through demonstrating interpretive ability and cultural literacy.
23.02	Acquire competence in reflecting critically upon the human condition.
24.0	Demonstrate the ability to apply mathematical concepts and mathematical/computational models and methods in problem solving in the general education components of the program. The student will be able to:
24.01	Determine appropriate mathematical and computational models and methods in problem solving.
24.02	Demonstrate an understanding of mathematical concepts.
24.03	Apply appropriate mathematical and computational models and methods in problem solving.
25.0	Demonstrate the ability to examine behavioral, social and cultural issues from a variety of points of view.
25.01	Demonstrate the ability to examine behavioral, social, and cultural issues from a variety of viewpoints.
25.02	Demonstrate an understanding of basic social and behavioral science concepts and principles used in the analysis of behavioral, social and cultural issues, past and present, local and global.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health

The Surgical First Assistant Core Curriculum should be taught by qualified staff as outlined in the most recent approved Commission on Accreditation on Allied Health Education programs (CAAHEP) accreditation standards and guidelines.

Entering students who have successfully completed the program 0351090905 or 0351090904, Surgical Technology or are currently Nationally Certified as a CST (Certified Surgical Technologist) or SA-C (Surgical Assistant-Certified) should be given appropriate advanced standing.

After successful completion of a Commission on Accreditation on Allied Health Education programs (CAAHEP) accredited surgical first assistant program, students are eligible to take the National Board of Surgical Technology and Surgical Assisting First Assistant exam as approved.

The standard length for the AS degree program is 74 college credits.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Surgical First Assisting (0351090908) – 59 Credits

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Surgical Services  
**Career Cluster:** Health Science

**AS**

CIP Number	1351090901
Program Type	College Credit
Standard Length	64 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists 31-9093 Medical Equipment Preparers 31-9099 Healthcare Support Workers, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program focuses on a core program of broad transferable skills and stresses understanding and demonstration of the following elements for employment in a specialized health science career field. The program specialization component focuses on advanced technical skills in a chosen health care targeted occupation including the applicable healthcare technology and healthcare applications.

The content includes but is not limited to communication skills, leadership skills, human relations, interpersonal skills, legal and ethical responsibilities, employability skills, anatomy, medical terminology, microbiology and infection control, the health care organization, health, safety and quality, use and care of standard equipment and supplies, CPR/Heart saver, and basic computer literacy.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 64 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate language arts knowledge and skills.
- 13.0 Solve problems using critical thinking skills, creativity and innovation.
- 14.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
- 15.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.

**In addition, students will complete the objectives in one of the following specialization tracks:**

Standards 16-26 must be completed by students specializing in the Central Sterile Processing Technologist track:

- 16.0 Describe supply distribution systems and the principles of inventory control.
- 17.0 Demonstrate the ability to recall and dispose of or reprocess sterile supplies.
- 18.0 Identify fundamentals of the supply chain.
- 19.0 Demonstrate the roles and responsibilities of the central supply worker.
- 20.0 Recognize basic principles of microbiology.
- 21.0 Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel.
- 22.0 Describe how central service is involved in controlling infections in hospitals.
- 23.0 Explain the purpose of occupational safety and health Act.
- 24.0 Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items.
- 25.0 Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers.
- 26.0 Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty.

Standards 27- 34 must be completed by students specializing in the Endoscopic Technician track:

- 27.0 Demonstrate central supply technician skills.
- 28.0 Demonstrate competencies in the core components of the endoscopy technician related to communication and interpersonal Skills.
- 29.0 Demonstrate an understanding of the basic sciences related to endoscopy.
- 30.0 Describe and practice safety measures in the endoscopy environment.
- 31.0 Perform patient care endoscopy procedures related to the endoscopy environment and describe methods for meeting patient's needs.
- 32.0 Demonstrate knowledge of the basic endoscopy skills necessary to function safely and effectively.
- 33.0 Demonstrate competencies in the core components of the endoscopy technician related to knowledge and skills.
- 34.0 Demonstrate competencies in the core components of the endoscopy technician related to legal and ethical responsibilities.

Standards 35- 43 must be completed by students specializing in the Surgical Technologist track:

- 35.0 Demonstrate central supply skills.
- 36.0 Use communication and interpersonal skills as related to surgical technology.
- 37.0 Demonstrate an understanding of the basic sciences related to surgical technology.
- 38.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.
- 39.0 Describe and practice safety measures in the surgical environment.
- 40.0 Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs.
- 41.0 Demonstrate knowledge of the skills necessary to function safely and effectively.
- 42.0 Demonstrate knowledge of and assist with surgical procedures.
- 43.0 Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology.

Florida Department of Education  
Student Performance Standards

**Program Title:** Surgical Services  
**CIP Number:** 1351090901  
**Program Length:** 64 Credit Hours  
**SOC Code(s):** 29-2055, 31-9093, 31-9099

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Demonstrate language arts knowledge and skills. – The students will be able to:
12.01	Locate, comprehend and evaluate key elements of oral and written information.
12.02	Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
12.03	Present information formally and informally for specific purposes and audiences.
13.0	Solve problems using critical thinking skills, creativity and innovation. – The students will be able to:
13.01	Employ critical thinking skills independently and in teams to solve problems and make decisions.
13.02	Employ critical thinking and interpersonal skills to resolve conflicts.
13.03	Identify and document workplace performance goals and monitor progress toward those goals.
13.04	Conduct technical research to gather information necessary for decision-making.
14.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. – The students will be able to:
14.01	Describe the nature and types of healthcare organizations.
14.02	Explain the effect of key organizational systems on performance and quality.



14.03	List and describe quality control systems and/or practices common to the workplace.
14.04	Explain the impact of the global economy on healthcare organizations.
15.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
15.01	Employ leadership skills to accomplish organizational goals and objectives.
15.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
15.03	Conduct and participate in meetings to accomplish work tasks.
15.04	Employ mentoring skills to inspire and teach others.
15.05	Analyze attributes and attitudes of an effective leader.
15.06	Recognize factors and situations that may lead to conflict.
15.07	Demonstrate effective techniques for managing team conflict.
<b>The following standards 16-26 are necessary for those completing the Central Sterile Processing Technologist Specialization Track:</b>	
16.0	Describe supply distribution systems and the principles of inventory control. -- The student will be able to:
16.01	Define the benefits of inventory control.
16.02	Describe the methods of inventory control.
16.03	Compare the advantages and disadvantages of each distribution methods.
16.04	Process a requisition marked "stat" - locate article, price, etc.
16.05	Demonstrate the process of stock rotation.
16.06	Describe the processes for loaner instrumentation and equipment.
16.07	Describe the process of product evaluation.
16.08	Describe the procedures for tracking the usage of medical/surgical supplies, patient care equipment and specialty carts.
16.09	Describe the procedures for documenting supply and equipment charges.
16.10	Demonstrate the methods of case cart preparation and the utilization of preference cards.
17.0	Demonstrate the ability to recall and dispose of or reprocess sterile supplies. -- The student will be able to:

17.01	Explain the factors that affect how long a package can be considered safe for use.
17.02	Explain the differences between event related, date related, and manufacturer recommendations.
17.03	State the methods of determining expiration dates.
17.04	List the steps in reprocessing outdated hospital packaged items.
17.05	List conditions that would make a product unsafe for use.
17.06	Describe the use of tamper evident seals.
17.07	Describe the methods of reprocessing.
17.08	Identify standards and facility policies on reprocessing of single use items.
17.09	Describe the process of recall for medical/surgical supplies.
18.0	Identify fundamentals of the supply chain. -- The student will be able to:
18.01	Describe the process of supply chain management.
18.02	Communicate with other hospitals, facilities, or company representatives for procurement of supplies and equipment.
18.03	Describe several different methods of procurement of supplies.
18.04	Describe basics of receiving items, including documentation of receiving and release to other facilities.
19.0	Demonstrate the roles and responsibilities of the central supply worker. -- The student will be able to:
19.01	Describes professional standards related to personal hygiene and dress codes for the central supply worker to include appropriate PPE.
19.02	Identifies relevant federal, state, and local guidelines, standards and regulations.
19.03	Describes the function and workflow of the sterile processing department.
19.04	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, and reaching.
19.05	Apply policies and procedures related to sterile processing functions (safety, infection control, disaster control, disaster, MSDS, incident reports, etc.).
19.06	Describes importance of following device, equipment, instrument or supply manufacturer's instructions for processing, operation, and troubleshooting.
20.0	Recognize basic principles of microbiology. -- The student will be able to:
20.01	Describe terms related to microbiology and the control of microorganisms in central sterile processing departments.

20.02	Identify the main categories of microorganisms.
20.03	Describe the life functions of microorganisms.
20.04	Describe conditions affecting the growth of bacteria.
20.05	Describe special methods used to destroy harmful microorganisms on fomites in the environment.
20.06	List the helpful microorganisms.
20.07	Describe how the body controls the growth of pathogenic microorganisms.
20.08	Identify pathogenic microorganisms commonly found in central service departments.
21.0	Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel. -- The student will be able to:
21.01	Identify word elements for medical terms.
21.02	Relate anatomical concepts to orthopedic devices and other supplies and equipment issued by the CS Department.
22.0	Describe how central service is involved in controlling infections in hospitals. -- The student will be able to:
22.01	Describe hospital acquired infections.
22.02	Describe the types of isolation.
22.03	Describe the organization and functions of CS.
22.04	Describe the CS responsibilities for infection control and traffic patterns when in the operating room and other departments.
22.05	Identify proper storage and transportation standards for supplies in the facility (receivables, sterile, clean, or contaminated).
22.06	Describe the organizational patterns of health care facilities.
23.0	Explain the purpose of occupational safety and health act. -- The student will be able to:
23.01	Describe how employees are protected under OSHA.
23.02	Describe potential workplace hazards in CS. (wet floors, chemicals, fumes, gases, steam, electrical outlets, body fluids, microorganisms, sharps, and medical wastes).
23.03	Describe the role preventive maintenance plays in patient and personnel safety in the hospital.
23.04	Explain the purpose of Florida's "Right to Know" law and its provisions.
23.05	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.

23.06	Implement appropriate regulatory and accreditation agency patient safety guidelines.
24.0	Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items. -- The student will be able to:
24.01	Describe the importance of thorough cleaning to the overall objectives of making items safe for patient use.
24.02	Explain the importance of following manufacturers' instructions in cleaning each item for reprocessing.
24.03	Describe the levels of disinfection, the cleaning process and methods of disinfection for the environment, instruments, syringes, needles, rubber goods and equipment.
24.04	Describe the mechanisms of action for each disinfection method including ultrasonic machines and washer/sterilizers.
24.05	Describe the strategies for managing difficult to control microorganisms that require isolation techniques and specialized decontamination methods including Creutzfeldt - Jakob disease (CJD).
24.06	Describe the factors affecting decontamination (water temperature, loading procedures, water impurities, opening and disassembling).
24.07	Distinguish correct reprocessing policies related to single use, limited use, and reusable items.
24.08	Describe decontamination methods for drill systems and batteries.
24.09	Describe the function of case cart washers, and alternative methods of cleaning.
24.10	Describe the need for testing and monitoring all decontamination machines for proper function and cleaning agents.
24.11	Explain the importance of using correct chemicals for cleaning in regards to water quality, PH, filters, softeners, enzymes, lubricants.
24.12	Describe the types, characteristics, and uses of chemicals, solutions, and gases utilized for decontamination. (Detergents, disinfectants, enzymatics, germicides).
24.13	Demonstrate the decontamination process for instruments, syringes, needles, rubber goods and equipment.
24.14	Demonstrate flexible endoscopic leak testing, decontamination, and reprocessing.
24.15	Demonstrates decontamination and proper handling of rigid scopes.
24.16	Describes the methods of high level disinfection including manual and automated endoscopic reprocessor (AER).
24.17	Describe the types of sterilizers and methods of sterilization.
24.18	Describe the primary objectives in selecting the correct packaging materials for both the individual item and the sterilization method to be used.
24.19	Describe the principles of packaging.
24.20	Describe the characteristics of packaging materials in relationship to sterilization methods.
24.21	Describe the principles of linen pack and tray construction/assembly.

24.22	Describe the recommended labeling methodologies.
24.23	Identify basic surgical procedure trays, instruments, supplies, and accessories.
24.24	Explain the principles utilized when loading different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.25	Recognize equipment malfunction and list corrective actions.
24.26	Demonstrate the wrapping of procedure trays, instruments and other supplies.
24.27	Demonstrate loading of different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.28	Describe how sterile supplies should be handled.
24.29	Demonstrate handling, transportation and storage of clean, sterile and nonsterile supplies and equipment.
25.0	Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers. -- The student will be able to:
25.01	Describe the types of sterilization, sterilization cycles, and parameters for each.
25.02	Describe the importance of the manufacturer's recommendations for the safe operation of each type of sterilizer.
25.03	Describe the methods of sterilization monitoring.
25.04	Demonstrate the process of preparing and documenting the sterilizer load contents for each sterilizer correctly according to the manufacturer's recommendations.
25.05	Demonstrate the operation, testing, and monitoring of sterilizers.
25.06	Demonstrate the ability to interpret and document monitoring devices, printouts, and charts accurately for each sterilization system utilized.
25.07	Identify the standards for, and facility policy regarding, frequency of monitoring for all sterilizers.
26.0	Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty. -- The student will be able to:
26.01	Describe instrument terminology and identify the anatomy of surgical instruments (jaws, shanks, box locks, rings, etc.).
26.02	Describe the types and functions of instruments.
26.03	Describe the types of instrument construction.
26.04	Demonstrate appropriate techniques for inspection and testing of instruments.
26.05	Identify instrumentation and equipment by name and usage.
26.06	Correctly label instrumentation and equipment.

26.07	Demonstrate the methods of instrument identification, marking, and tracking of use.
26.08	Demonstrate the assembly of various instrument sets and surgical specialty equipment.
26.09	Demonstrate the process regarding the manufacturer's recommendations for instrument and equipment care including handling, operation, maintenance, and troubleshooting.
<b>The following standards 27-34 are necessary for those completing the Endoscopic Technician Specialization track:</b>	
27.0	Demonstrate central supply technician skills. -- The student will be able to:
27.01	Apply the principles of medical and sterile asepsis to the processing and use of instruments, equipment and supplies.
27.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
27.03	Inspect equipment and supplies for condition and quantity.
27.04	Identify principles and demonstrate techniques of disinfection and sterilization.
27.05	Decontaminate instruments, equipment and environment.
27.06	Identify/correct and/or report package integrity.
27.07	Replenish supplies and equipment.
27.08	Identify instruments, equipment and supplies for any procedure.
27.09	Demonstrate the ability to label, package goods and supplies as required.
27.10	Demonstrate various storage, case cart preparation and supply distribution methods for instruments, equipment and supplies.
27.11	Describe the types and use of inventory control systems.
28.0	Demonstrate competencies in the core components of the endoscopy technician related to communication and interpersonal skills. – The student will be able to:
28.01	Use various forms of communication in the role of Endoscopy Technician to communicate relevant, accurate, and complete information in a concise and clear manner.
28.02	Collaborate with the patient, physician, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's endoscopy care to promote positive outcomes.
28.03	Demonstrate proper use of communication technology including but not limited to intercoms, computers, written documentation logs and paging systems.
28.04	Demonstrate patient interviewing techniques.
28.05	Facilitate teamwork as a patient advocate and assistant to the physician.

28.06	Demonstrate competency regarding reporting and documentation responsibilities.
29.0	Demonstrate an understanding of the basic sciences related to endoscopy. -- The student will be able to:
29.01	Apply knowledge of the microbial environment to the care of the patient.
29.02	Relate anatomy, physiology and pathophysiology, to endoscopy procedures.
29.03	Apply the principles of medical and surgical asepsis to endoscopy procedures performed.
29.04	Discuss electricity, computers, and robotics as they relate to endoscopy procedures performed.
29.05	Apply knowledge of the pharmacologic agents used in the treatment of the endoscopy patient.
30.0	Describe and practice safety measures in the endoscopy environment. -- The student will be able to:
30.01	Inspect equipment and supplies for condition and quantity.
30.02	Implement appropriate Joint Commission patient safety goals.
30.03	Apply knowledge of endoscopy hazards to safe patient care.
31.0	Perform patient care endoscopy procedures related to the endoscopy environment and describe methods for meeting patient's needs. -- The student will be able to:
31.01	Perform safe patient transfer/transportation techniques used in the endoscopy unit setting.
31.02	Apply the principles of safe positioning and restraining patient for endoscopy procedures.
31.03	Apply the principles of safe usage of the electrosurgical unit, laser, endoscopes, and other equipment utilized.
31.04	Identify the roles of the members of the endoscopy team during each phase of endoscopy procedures.
31.05	Assist the surgical team with the care of the endoscopy patient.
31.06	Apply the principles of patient assessment and preparation.
31.07	Describe the perioperative techniques, methods and management of anesthesia related to the type of endoscopy procedure.
31.08	Apply knowledge of endoscopy assisting techniques such as splinting and assisting with specimens.
32.0	Demonstrate knowledge of the basic endoscopy skills necessary to function safely and effectively. -- The student will be able to:
32.01	Demonstrate an understanding of the gastrointestinal system, respiratory system and relevant disease processes.
32.02	Select instruments, equipment and supplies for endoscopy procedures using physician preference/procedure cards.

32.03	Measure and pour sterile solutions and medications.
32.04	Differentiates appropriately the use of sterile technique regarding the donning of sterile gloves and the use of instruments, supplies and equipment for the scenario given.
32.05	Describes the principles of positioning, draping patient, passing instruments, monitoring field and manipulation of scope.
32.06	Demonstrates the preparation and/or updates procedure cards to meet a specific surgeon's preferences correctly.
33.0	Demonstrate competencies in the core components of the endoscopy technician related to knowledge and skills. -- The student will be able to:
33.01	Prioritize care or actions to be taken in a given circumstance to expedite the procedure or emergency situation.
33.02	Describe preoperative diagnosis, common complications, and operative pathophysiology related to the specific endoscopy procedures performed.
33.03	Describe and apply common patient diagnostic and monitoring devices as applicable to the endoscopy specialty.
33.04	Assist the surgical team with preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, draping, and setup preparation.
33.05	Identify gross anatomical structures correctly during endoscopy procedures.
33.06	Demonstrate appropriate tissue handling techniques including the care of the endoscopy specimens.
33.07	Describe the appropriate sequence for common endoscopy procedures.
33.08	Utilize appropriate techniques to assist with facilitating visualization.
33.09	Demonstrate appropriate safe endoscopy techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known endoscopy hazard.
33.10	Select appropriate instruments, equipment and supplies for the procedure.
33.11	Demonstrate competence with technology including the use of instruments, equipment and supplies for the endoscopy procedure.
33.12	Assist the surgical team with postoperative care of the patient to facilitate proper patient care.
33.13	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, endoscopy misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and injury.
33.14	Facilitate the continuity of care within the healthcare setting to access available resources and services.
34.0	Demonstrate competencies in the core components of the endoscopy technician related to legal and ethical responsibilities. -- The student will be able to:
34.01	State methods, standards and aids that assist an Endoscopy Technician with interpreting and following legal responsibilities.
34.02	Explain the job requirements.



34.03	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as an endoscopy technician, and the professional skills necessary to fulfill the role.
34.04	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.
<b>The following standards 35-43 are necessary for those completing the Surgical Technologist Specialization Track:</b>	
35.0	Demonstrate central supply skills. – The student will be able to:
35.01	Apply the principles of medical/surgical asepsis including attire, environmental control and traffic patterns to control and manage dirty, clean and sterile areas of the operating room and central supply.
35.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
35.03	Inspect and send out for repair instruments, equipment and supplies regarding condition and quantity.
35.04	Describe the methods of disinfection and sterilization.
35.05	Demonstrate the handling, inspection and notification process regarding package integrity.
35.06	Demonstrate correctly decontamination techniques for instruments, equipment, and the environment used for surgical procedures.
35.07	Describe clean and sterile transportation, restocking, and storage principles for instruments, supplies and equipment.
35.08	Identify instruments, supplies and equipment for any surgical procedure.
35.09	Describe various supply distribution and inventory control methods.
35.10	Demonstrate ability to prepare and label items for high level disinfection and sterilization correctly.
35.11	Demonstrate the techniques of high level disinfection and sterilization for immediate use items.
35.12	Demonstrate case cart preparation and management.
36.0	Use communication and interpersonal skills as related to surgical technology. – The student will be able to:
36.01	Describe various forms of communication in the role of surgical technologist.
36.02	Analyze and select the appropriate behavioral response unique to the patient's needs.
36.03	Describe the concepts of conflict resolution, assertive behavior and the principles of teamwork in the surgical environment.
37.0	Demonstrate an understanding of the basic sciences related to surgical technology. – The student will be able to:
37.01	Describe the concepts of microbiology and relate key principles to the surgical environment.
37.02	Compare and contrast the structure and characteristics of microorganisms found in the surgical environment.

37.03	Relate medical terminology, medical abbreviations, and anatomy and physiology to surgical specialties and specific procedures.
37.04	Analyze patient defense mechanisms, the chain of infection and the infectious process as related to surgical practice.
37.05	Demonstrate infection and disease transmission control techniques following the Center for Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) guidelines for surgery.
37.06	Correlate wound classifications and wound healing principles with wound management guidelines.
37.07	Discuss the principles of information technology, electricity and robotics as they relate to surgery.
38.0	Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment. -- The student will be able to:
38.01	Describe the roles of the anesthesia provider and circulating nurse.
38.02	Analyze the administration of anesthesia including the methods, agents, and techniques.
38.03	Describe the preoperative examination and preparation process for both surgery and anesthesia.
38.04	Describe potential anesthesia and operative complications and interventions for each.
38.05	Define the terminology and describe the basic concepts of pharmacology including pharmacokinetics and pharmacodynamics.
38.06	Identify the classifications, actions, effects and precautions for common drugs used at the sterile field and within the surgical environment.
38.07	Demonstrate the application of the six rights of medication administration (right patient, right medication, right dosage, right route, right time/frequency, and right documentation).
38.08	Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.
38.09	Demonstrate the appropriate methods of transferring and accepting medications onto the sterile field.
38.10	Prepare, manage and label sterile solutions and medications accurately within the sterile field.
38.11	Correctly calculate common medication conversions and dosages.
38.12	Demonstrate preparation and passing of medication mixtures using ratio and proportions correctly.
38.13	Maintains an accurate account of the amount of each medication and/or solution used at the field and notifies circulator as appropriate to the situation to ensure accurate documentation.
39.0	Describe and practice safety measures in the surgical environment. – The student will be able to:
39.01	Describe the role, job duties and responsibilities of the surgical technologist in the healthcare setting.
39.02	Inspect equipment and supplies for condition and quantity.
39.03	Demonstrate appropriate safety measures to prevent operating room fires and electrical shock from equipment.

39.04	Describe appropriate safety measures for laser and electrosurgical unit usage in surgery.
39.05	Implement appropriate regulatory and accreditation agency patient safety guidelines.
39.06	Describe the role of the surgical technologist in a disaster situation.
39.07	Describe the role of the surgical technologist in an emergency patient situation.
39.08	Prepare the operative site.
40.0	Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs. – The student will be able to:
40.01	Demonstrate patient transfer/transportation techniques used in the operating room (OR).
40.02	Describe appropriate review of the chart including preoperative identification, preoperative checklists, diagnostic tests, lab values and surgical consent.
40.03	Monitor OR traffic, placement of sterile tables and ensure steps are taken to reduce microbial fallout.
40.04	Assist with positioning and apply safety devices correctly to the patient for surgery.
40.05	Describe the function, assembly, application and care of critical specialty equipment utilized.
40.06	Correlate anesthesia monitoring devices, patient complications and interventions with maintaining patient homeostasis.
40.07	Demonstrate correctly the connection and operation of essential equipment for the surgical procedure.
40.08	Perform steps for Foley catheter insertion and connecting to drainage correctly.
40.09	Demonstrate applicable wound management principles including the placement and security of catheters, wound drainage systems, sterile dressings and splint applications.
40.10	Discuss relevant and unique factors regarding postoperative care specific to the procedure.
41.0	Demonstrate knowledge of the skills necessary to function safely and effectively. – The student will be able to:
41.01	Demonstrate the use of various forms of communication in the role of surgical technologist.
41.02	Maintain current documentation in the clinical setting relative to the surgical technologist role.
41.03	Demonstrate proper use of the communication systems.
41.04	Select and verify required instrumentation, equipment and supplies, including any implants needed for specific surgical procedures using core knowledge and the applicable surgeon preference/procedure cards.
41.05	Demonstrate the surgical scrub and donning of sterile gown and gloves.
41.06	Demonstrate application of sterile technique principles including the appropriate corrective action for common breaks in sterile technique.

41.07	Demonstrate proper draping of tables, solution stands, mayo stand, patient and equipment.
41.08	Demonstrate the set up and management of the sterile mayo stand and/or instrument table(s).
41.09	Select suture and needle appropriately for each scenario given based on function and type.
41.10	Prepare, pass and monitor sharps, sutures, ligatures, ties and staples.
41.11	Demonstrate assisting gowning/gloving of other sterile team members.
41.12	Participate in the surgical time out to prevent wrong site surgery and delays in the surgical procedure.
41.13	Prepare and pass instruments, equipment, tissue replacement materials, implants and supplies efficiently.
41.14	Monitor the surgical site regarding counted items, stage of surgery, tissue appearance and patient's body fluids.
41.15	Demonstrate correctly the initiation and completion of counts regarding sponges, sharps, instruments and miscellaneous items used within the patient's wound to prevent foreign body retention.
41.16	Demonstrate ability to maintain retraction, cut suture, provide retraction and hold instruments in the second assistant role as directed by the surgeon.
41.17	Demonstrate ability to prepare, validate, handle and preserve specimen on and off the sterile field accurately for laboratory analysis.
42.0	Demonstrate knowledge of and assist with surgical procedures. – The student will be able to:
42.01	Correlate the preoperative diagnosis, diagnostic interventions, common complications, and operative pathophysiology relative to specific surgical procedures.
42.02	Describe the types of incisions, methods of wound closure, and mechanisms of wound management.
42.03	Describe the usual sequence of a common surgical procedure (i.e. incision into the anatomy, dissection of the anatomy, operative steps of the procedure, and closing of the anatomy).
42.04	Select the appropriate instrument, equipment, or supply for each step of the procedure.
42.05	Demonstrate effective perioperative case management ensuring cost control and time/motion economy methods are utilized to maximize the efficiency of the OR team.
43.0	Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology. – The student will be able to:
43.01	State methods, standards and aids that assist a surgical technologist with interpreting and following legal responsibilities.
43.02	Provide health care within the ethical/legal framework of the surgical technologist's role.
43.03	Describe the principles of problem solving and confidentiality in ethical decision making and risk management.
43.04	Describe the key qualities related to the development of a surgical conscience.



## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

### Special Notes

#### Specialization Track Descriptions:

**Specialization Track:** Central Sterile Processing Technologist  
**Specialization Length:** 30 credit hours

**Specialization Concepts and Content:** The purpose of this track is to prepare students for initial employment with an occupational title as a Central Sterile Processing Technician in various specialized areas, or to provide supplemental training for persons previously or currently employed in these occupations.

**Specialization Track:** Endoscopic Technician  
**Specialization Length:** 24 credit hours

**Specialization Concepts and Content:** The purpose of this track is to prepare students for initial employment with an occupational title as Endoscopic or Gastrointestinal Lab (GI Lab) Technician in various specialized areas, or to provide supplemental training for persons previously or currently employed in these occupations.

**Specialization Track:** Surgical Technologist  
**Specialization Length:** 49 credit hours

**Specialization Concepts and Content:** The purpose of this track is to prepare students for initial employment with an occupational title as a Surgical Technologist in various specialized areas, or to provide supplemental training for persons previously or currently employed in these occupations.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The Specialization Core Curriculum should be taught by qualified staff as outlined in the most recent approved Commission on Accreditation on Allied Health Education programs (CAAHEP) or other national recognized accreditation standards and guidelines for that specialization.

Entering students who have successfully completed the program 0317.021100, Surgical Technology or currently Nationally Certified as a CST (Certified Surgical Technologist), should be given appropriate advanced standing.

After successful completion of an accredited program, students are eligible to take the national certification examination as applicable to the specialization.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Central Sterile Processing Technologist, 0351101202– 30 Credits

Endoscopy Technician, 0351099902 – 24 Credits

Surgical Technologist, 0351090904 – 49 Credits

Standards for the above certificate programs are contained in separate curriculum frameworks.



Florida Department of Education  
Curriculum Framework

**Program Title:** Diagnostic Medical Sonography Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351091004
Program Type	College Credit
Standard Length	77 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2032 Diagnostic Medical Sonographers

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as diagnostic medical sonographers SOC Code 29-2032 (Diagnostic Medical Sonographers) or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to anatomy, physiology and pathology of the abdominal, pelvic, and urogenital structures; physics; instrumentation; equipment standards; biological effect of ultrasound; patient care; clinical medicine; applications and limitations of ultrasound; related diagnostic procedures; image evaluation; administration; first aid and cardiopulmonary resuscitation; employability skills; leadership and human relations skills; health and safety.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 77 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care.
- 13.0 Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis.
- 14.0 Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound.
- 15.0 Demonstrate knowledge of the principles of Doppler.
- 16.0 Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting.
- 17.0 Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems.
- 18.0 Apply knowledge of the anatomy and scanning techniques related to superficial structures.
- 19.0 Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands.
- 20.0 Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis.
- 21.0 Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics.
- 22.0 Develop a continuous awareness of the disease processes.
- 23.0 Apply accumulated knowledge to the process of creating diagnostic sonograms.
- 24.0 Apply skills needed to complete diagnostic images of high quality from a variety of scanning units.

Florida Department of Education  
Student Performance Standards

**Program Title:** Diagnostic Medical Sonography Technology  
**CIP Number:** 1351091004  
**Program Length:** 77 credit hours  
**SOC Code(s):** 29-2032

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care. – The student will be able to:
12.01	Explain the role of the sonographer.
12.02	Describe the relationship of ultrasound to other imaging-modalities.
12.03	Describe and demonstrate the proper uses of orientation and standard labeling of ultrasound images.
12.04	Explain the basic concepts of ultrasound equipment available and demonstrate safety in their use and basic techniques of scanning.
12.05	Explain and demonstrate the criteria for image evaluation and specifically of special sonographic parameters.
12.06	Demonstrate and describe proper body mechanics to avoid work related musculoskeletal disorders when performing sonographic examinations.
12.07	Describe special problems encountered and methods related to medical ethics and law in sonography.
12.08	Describe the organizational structure common to most hospitals with special emphasis placed on the role of the ultrasound department.
12.09	Describe the relationship of the sonographer to the patients and their special needs.
12.10	Demonstrate professional communication skills required on a daily basis in the health care setting.
12.11	Explain and demonstrate the methods of patient preparation and care before and during a sonogram.

12.12	Demonstrate proper body mechanics when transporting and assisting patients.
12.13	Discuss current trends in sonographic technology and techniques.
12.14	Demonstrate proper universal precautions and sterile techniques when preparing for a sonographic procedure.
13.0	Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis. – The student will be able to:
13.01	Explain what sound is and its characteristics.
13.02	Compare the difference between pulsed and continuous wave ultrasound.
13.03	Explain amplitude and intensity of sound as it applies to sonography.
13.04	Describe the causes and effects of attenuation and acoustic impedance on ultrasound.
13.05	Identify the causes and effects of incidence, scattering and refraction of ultrasound.
13.06	Explain the Doppler Effect as it relates to ultrasound.
13.07	Describe the factors of attenuation versus depth penetration of ultrasound in human tissue.
13.08	Identify resolution and controlling factors of resolution as applied to sonography.
13.09	Discuss and demonstrate the basic principles governing sound and sound interaction in various types of tissue.
13.10	Describe and demonstrate the conditions affecting sound transmission such as attenuating factors.
13.11	Relate mathematical formulas to the interaction of sound with various mediums.
13.12	Describe resolution and its effect on the final image.
13.13	Describe and demonstrate the factors that control and determine axial, elevational and lateral resolution.
14.0	Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound. – The student will be able to:
14.01	Describe piezoelectric effects.
14.02	Describe transducer construction.
14.03	Discuss historical perspectives related to the development of the ultrasound system.
14.04	Explain and describe how signal processing affects image production and presentations.
14.05	Discuss basic system operation in the form of block diagrams for real-time and Doppler image production.

14.06	Describe the purpose and use of typical controls located on ultrasound systems.
14.07	Identify methods of determining and assuring quality control both sonographically and photographically.
14.08	Discuss common processing techniques including but not limited to harmonics, persistence, spatial compounding, panoramic imaging, and RES.
14.09	Discuss causes, detection and control of factors that may create biologic effects in human tissue with insonation at the diagnostic medical sonography exposure level.
15.0	Demonstrate knowledge of the principles of Doppler. – The student will be able to:
15.01	Explain the general principles of Doppler techniques and the Doppler formula.
15.02	Describe how pulse wave Doppler is processed and displayed.
15.03	Describe how color-flow Doppler is processed and displayed.
15.04	Describe how power Doppler is processed and displayed.
15.05	Identify normal and abnormal Doppler wave forms.
15.06	Discuss the advantages and disadvantages of the various Doppler methods.
15.07	Describe the purpose and use of typical controls used to optimize Doppler acquisition and display.
15.08	Demonstrate skills required on a daily basis in the typical Sonography setting for obtaining and displaying Doppler.
16.0	Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting. – The student will be able to:
16.01	Utilize patient information systems.
16.02	Demonstrate appropriate transducer selection for specific sonographic application.
16.03	Utilize amplification in all its forms to produce a diagnostic quality sonogram.
16.04	Utilize power to produce a diagnostic quality sonogram while maintaining the ALARA principle.
16.05	Utilize the various forms of processing to produce a diagnostic quality sonogram.
16.06	Utilize the various types of scanning techniques and patient positioning required to produce diagnostic quality sonograms.
16.07	To explain and recognize typical artifacts as found in sonographic imaging.
16.08	Utilize test objects and phantoms.
17.0	Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems. – The student will be able to:

17.01	Identify gross abdominal structures as demonstrated by ultrasound such as: the liver, gall bladder, aorta, inferior vena cava, stomach, pancreas, bowel, spleen, lymph nodes, retroperitoneum, and peritoneal cavity.
17.02	Identify the gross upper abdominal organs in two planes.
17.03	Identify the gross retroperitoneal organs, bowel and peritoneum in two planes.
17.04	Explain the physiology of the upper abdominal organs and the related-laboratory results.
17.05	Explain the physiology of the retroperitoneal organs, bowel and peritoneum.
17.06	Explain and demonstrate the protocol for sonographic examination of the upper abdominal organs.
17.07	Explain and demonstrate the protocol for sonographic examination of the retroperitoneal organs, bowel and peritoneum.
17.08	Explain the common pathologies related to the upper abdomen including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
17.09	Explain the common pathologies related to the retroperitoneal organs, bowel and peritoneum including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
17.10	Explain screen orientation and its relationship to the upper abdomen and retroperitoneal structures.
17.11	Describe and perform procedures of a complete ultrasound examination of the upper abdomen from preparation to reporting.
17.12	Describe and perform procedures of a complete ultrasound examination of the bowel, lymph nodes, retroperitoneum, and peritoneal cavity from preparation to reporting.
18.0	Apply knowledge of the anatomy and scanning techniques related to superficial structures. – The student will be able to:
18.01	Identify gross superficial structures as demonstrated by ultrasound including but not limited to: the thyroid, scrotum (testicular), abdominal wall, neck, breast, prostate and musculoskeletal.
18.02	Identify superficial structures in two planes.
18.03	Explain the physiology of the superficial structures and the related laboratory results.
18.04	Explain and demonstrate the protocol for the sonographic examination of superficial structures.
18.05	Explain the common pathology related to the superficial structures including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
18.06	Describe and perform procedures of a complete ultrasound examination of each of the superficial structures from preparation to reporting.
19.0	Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands. – The student will be able to:
19.01	Identify the gross structures of the urinary system as demonstrated by ultrasound including but not limited to the kidney, ureters and urinary bladder.
19.02	Identify the gross organs of the urinary system in two planes.

19.03	Identify the gross adrenals in two planes.
19.04	Explain the physiology of the urinary system organs and the related-laboratory results.
19.05	Explain the physiology of the adrenals and the related-laboratory results.
19.06	Explain and demonstrate the protocol for sonographic examination of the urinary system organs.
19.07	Explain and demonstrate the protocol for sonographic examination of the adrenals.
19.08	Explain the common pathologies related to the urinary system organs including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
19.09	Explain the common pathologies related to the adrenals including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
19.10	Explain screen orientation and its relationship to the urinary system structures and the adrenals.
19.11	Describe and perform procedures of a complete ultrasound examination of the urinary system from preparation to reporting.
19.12	Describe and perform procedures of a complete ultrasound examination of the adrenals from preparation to reporting.
20.0	Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis. – The student will be able to:
20.01	Identify the gross female pelvic structures as demonstrated by ultrasound including but not limited to the female reproductive organs and urinary bladder.
20.02	Identify the gross female pelvic organs in two planes.
20.03	Explain the physiology of the female pelvic organs and the related laboratory results.
20.04	Explain and demonstrate the protocol for sonographic examination of the female pelvic organs.
20.05	Explain the common pathologies related to the female pelvis including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
20.06	Explain screen orientation and its relationship to the female pelvic structures.
20.07	Describe and perform procedures of a complete ultrasound examination of the female pelvis from preparation to reporting.
20.08	Explain the protocol for both transabdominal, translabial, and transvaginal pelvic ultrasound.
21.0	Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics. – The student will be able to:
21.01	Identify gross obstetrical structures as demonstrated by ultrasound including but not limited to the uterus and adnexa in both the pregnant and postpartum state.
21.02	Discuss anatomy and physiology of the various stages of fetal development as related to ultrasound.
21.03	Discuss anatomy and physiology of the placenta at all stages of development.

21.04	Describe the basic stages of embryology and sonographic relationships.
21.05	Describe events occurring in the first trimester and their relationship to ultrasound.
21.06	Explain the physiology of organs related to obstetrics.
21.07	Explain and demonstrate the protocol for sonographic examinations used in obstetrics.
21.08	Explain the common pathologies related to obstetrics including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
21.09	Explain screen orientation and its relationship to the organs related to obstetrics.
21.10	Describe and perform methods for determining gestational age and fetal growth by ultrasound using appropriate biometrics.
21.11	Explain the effects of specific diseases common to the gestational period.
21.12	Compare normal and abnormal states of embryology in the human as demonstrated by ultrasound.
21.13	Perform a biophysical profile to determine fetal well-being.
21.14	Compare the normal and pathologic appearance of the fetus and the fetal environment.
21.15	Demonstrate special techniques of ultrasound scanning and collateral processes during pregnancy.
21.16	Explain the protocol and AIUM guidelines for obstetrical ultrasound.
21.17	Explain and demonstrate the special safety precautions required during an obstetrical ultrasound with a focus on AIUM guidelines.
21.18	Describe and perform procedures of a complete obstetrical ultrasound examination from preparation to reporting.
21.19	Describe and perform Doppler applications for evaluation of a pregnancy (i.e. umbilical artery, etc.).
22.0	Develop a continuous awareness of the disease processes. – The student will be able to:
22.01	Discuss basic concepts of the causes of disease.
22.02	Discuss common urogenital pathology.
22.03	Discuss gastrointestinal diseases.
22.04	Discuss common pathology found in obstetrics and gynecology.
22.05	Discuss common pathology found in the cardiovascular system.
22.06	Discuss common pathology found in hepatobiliary system to include: liver, gallbladder, pancreas, and spleen.



22.07	Discuss post-surgical changes and its effects on images.
22.08	Demonstrate knowledge and understanding of the role of the sonographer in performing interventional/invasive procedures.
23.0	Apply accumulated knowledge to the process of creating diagnostic sonograms. – The student will be able to:
23.01	Complete in all aspects a diagnostic sonogram with emphasis on:
23.01.01	patient identification
23.01.02	patient interaction
23.01.03	professionalism
23.01.04	creation of an optimized sonogram
23.01.05	appropriate image annotation
23.01.06	safety
23.01.07	recognition of anatomy, both normal and pathologic.
23.02	Complete routine documentation associated with a typical ultrasound department.
23.03	Present a sonographic exam to the interpreting physician in completed form.
24.0	Apply skills needed to complete diagnostic images of high quality from a variety of scanning units. – The student will be able to:
24.01	Perform complete and diagnostic examinations of the abdomen, superficial structures, pelvis and obstetrical patient using real-time and Doppler techniques using a variety of ultrasound machines.
24.02	Present completed examinations in detail with justification of all techniques, methods and procedures used to obtain data.
24.03	Identify gross pathology of the abdomen, pelvis and obstetrical patient, both on sonograms and related imaging modalities.
24.04	Perform all preliminary procedures leading to actual examination by Sonography and all procedures necessary post examination.
24.05	Demonstrate skills needed to relate with tact and diplomacy with patients, physicians, nurses, other imaging personnel and the general hospital population.
24.06	Demonstrate those characteristics that reflect the high degree of professionalism associated with the field of ultrasound.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program should meet the requirements of:

Commission on Accreditation of Allied Health Education Programs (CAAHEP)  
361 Park St.  
Clearwater, FL 33756  
(727) 210-2350

Written clinical affiliation agreements must be maintained with each health care facility. Health care facilities must be accredited by The Joint Commission.

Students completing this program may apply to take one or both of the national registry examinations to obtain certification, for further information contact:

American Registry of Diagnostic  
Medical Sonographers (ARDMS)  
51 Monroe St., Plaza East 1  
Rockville, Maryland 20850-2400  
(301) 738-8401

Or

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Diagnostic Medical Sonography Specialist (New) (0351091005) – 47 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Radiography  
**Career Cluster:** Health Science

**AS**

CIP Number	1351091100
Program Type	College Credit
Standard Length	77 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2034 Radiologic Technologists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as Radiographers, Radiologic Technologists SOC Code 29-2034 (Radiologic Technologists/Technicians) or to provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to introduction to radiography, medical ethics and law, medical terminology, methods of patient care, human structure and function, radiographic procedures, principles of radiographic exposure, imaging equipment, image processing, radiation physics, principles of radiation protection, principles of radiation biology, radiographic pathology, introduction to quality assurance, introduction to computer literacy, and clinical education. The curriculum includes a plan for well-structured competency based clinical education.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 77 credit hours.

## **Regulated Programs**

**The program must be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a Certified Radiologic Technologist. As specified in Chapter 468 Part IV F.S. and Chapter 64E-3 F.A.C.,**

The program must be accredited. by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300, or by the Southern Association of Colleges and Schools.

Program completers will be eligible to make an application to take the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a functional knowledge of medical terminology required in radiologic science.
- 02.0 Convey an understanding of the ethics and laws that impact Radiologic Sciences at both the state and federal levels.
- 03.0 Demonstrate introductory knowledge of radiologic science and the health care system.
- 04.0 Demonstrate knowledge of and perform patient care procedures required in radiologic sciences.
- 05.0 Demonstrate an understanding of pharmacology and venipuncture procedures as it relates to radiologic science.
- 06.0 Demonstrate proficiency in the skills, techniques and knowledge required for image analysis.
- 07.0 Demonstrate proficiency in the skills, techniques and knowledge required to operate imaging equipment.
- 08.0 Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including x-ray production, image formation, and factors related to radiographic quality.
- 09.0 Demonstrate an understanding of the structure and function of the human body with a focus on the muscular, endocrine, respiratory, urinary and appendicular skeletal systems.
- 10.0 Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate radiographic procedures.
- 11.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice.
- 12.0 Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including image acquisition and processing, scatter radiation control, and image evaluation.
- 13.0 Demonstrate an understanding of the concepts and equipment required of digital image acquisition and display.
- 14.0 Demonstrate an understanding of the structure and function of the human body with a focus on the axial skeletal system.
- 15.0 Demonstrate an understanding of the structure and function of the human body with a focus on the circulatory/cardiovascular, digestive and reproductive systems.
- 16.0 Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate fluoroscopic procedures.
- 17.0 Demonstrate an understanding of the structure and function of the human body with a focus on the nervous system.
- 18.0 Demonstrate introductory knowledge of computed tomography.
- 19.0 Demonstrate appropriate venipuncture technique.
- 20.0 Demonstrate an understanding of radiographic pathology.
- 21.0 Demonstrate an understanding of how radiation is produced and the characteristics of different classifications of radiation.
- 22.0 Demonstrate an understanding of the structure and function of the human body including the immune system and chemical composition of the body.
- 23.0 Demonstrate an understanding of the integral aspects of radiation biology required of a radiographer.
- 24.0 Convey the importance for proper radiation protection and the precautions radiographers should take to prevent unnecessary exposure to themselves and patients.

Florida Department of Education  
Student Performance Standards

**Program Title:** Radiography  
**CIP Number:** 1351091100  
**Program Length:** 77 credit hours  
**SOC Code(s):** 29-2034

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**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate a functional knowledge of medical terminology required in radiologic science. – The student will be able to:
01.01	Apply the word-building process for medical terminology.
01.02	Interpret medical abbreviations and symbols.
01.03	Critique orders and requests.
01.04	Define medical imaging and radiation.
01.05	Translate medical terms, abbreviations and symbols into layman’s terms.
02.0	Convey an understanding of the ethics and laws that impact Radiologic Sciences at both the state and federal levels. – The student will be able to:
02.01	Discuss the origins of medical ethics.
02.02	Apply medical/professional ethics in the context of a broader societal ethic.
02.03	Explain the role of ethical behavior in health care delivery.
02.04	Explain concepts of personal honesty, integrity, accountability, competence and compassion as ethical imperatives in health care.
02.05	Identify legal and professional standards and relate each to practice in health professions.
02.06	Identify specific situations and conditions that give rise to ethical dilemmas in health care.
02.07	Explain select concepts embodied in the principles of patients’ rights, the doctrine of informed (patient) consent and other issues related to patients’ rights.

02.08	Explain the legal implications of professional liability, malpractice, professional negligence, and other legal doctrines applicable to professional practice.
02.09	Describe the importance of timely, accurate, and comprehensive methods of documentation as a legal and ethical imperative.
02.10	Explore theoretical situations and questions relating to the ethics of health care delivery.
02.11	Explain legal terms, principles, doctrines and laws specific to the radiologic sciences.
02.12	Outline the conditions necessary for a valid malpractice claim in medical imaging.
02.13	Describe institutional and professional liability protection typically available to the radiographer.
02.14	Describe the components and implications of informed consent.
02.15	Identify standards for informed consent and disclosure of protected health information (PHI).
02.16	Describe how consent forms are used relative to specific radiographic procedures.
02.17	Differentiate between civil and criminal liability.
02.18	Define tort and explain the differences between intentional and unintentional torts.
03.0	Demonstrate introductory knowledge of radiologic science and the health care system. – The student will be able to:
03.01	Identify health science professions that participate in the total health care of the patient.
03.02	Identify various settings involved in the delivery of health care.
03.03	Discuss the reimbursement/payment options for health care services.
03.04	Discuss the role and value of a mission statement to the operation of a healthcare institution.
03.05	Describe relationships and interdependencies of departments within a health care institution.
03.06	Discuss the responsibilities and relationships of all personnel in the radiology department.
03.07	Differentiate between quality assurance (QA) and continuous quality improvement (CQI).
03.08	Differentiate between accreditation types.
03.09	Define credentialing, national certification, registration, and state licensure.
03.10	Discuss career opportunities and advancement for the radiographer.
03.11	Identify the benefits of continuing education as related to improved patient care and professional development.



03.12	Describe the types, purpose, and functions of professional organizations (ASRT).
03.13	Identify educational and certifications requirements.
03.14	Identify state and federal regulatory agencies.
04.0	Demonstrate knowledge of and perform patient care procedures required in radiologic sciences. – The student will be able to:
04.01	Identify the responsibilities of the health care facility and members of the health care team.
04.02	List the general responsibilities of the radiographer.
04.03	Describe the practice standards for the radiographer as defined by the ASRT and state licensure.
04.04	Differentiate between culture and ethnicity.
04.05	Explain perceptions of dying and death from the viewpoint of both patient and radiographer.
04.06	Identify methods for determining the correct patient for a given procedure.
04.07	Explain the use of various communication models.
04.08	Explain specific aspects of a radiographic procedure to the patient.
04.09	Demonstrate correct principles of body mechanics applicable to patient care.
04.10	Demonstrate techniques for specific types of patient transfer.
04.11	Demonstrate select procedures to turn patients who have various health conditions.
04.12	Describe immobilization techniques for various types of procedures and patient conditions.
04.13	Describe specific patient safety measures and concerns.
04.14	Explain the purpose, legal considerations and procedures for incident reporting.
04.15	Describe methods to evaluate patient physical status.
04.16	List the information to be collected prior to a patient examination.
04.17	Describe vital signs and lab values used to assess the condition of the patient, including sites for assessment and normal values.
04.18	Define terms related to infection control.
04.19	Describe the importance of standard precautions and isolation procedures, including sources and modes of transmission of infection and disease and institutional control procedures.

04.20	Identify symptoms related to specific emergency situations.
04.21	Describe the institution's emergency medical code system and the role of the student during a medical emergency.
04.22	Explain the age-specific considerations necessary when performing radiographic procedures.
04.23	Describe appropriate procedures for management of various types of trauma situations.
04.24	Describe the symptoms and medical interventions for a patient with a contrast agent reaction.
04.25	Explain the role of the radiographer in patient education.
04.26	Describe the patient preparation for contrast studies.
04.27	Identify specific types of tubes, lines, catheters and collection devices.
04.28	Outline the steps in the operation and maintenance of suction equipment.
04.29	Outline the steps in the operation and maintenance of oxygen equipment and demonstrate proper use.
04.30	Demonstrate competency in basic life support (BLS).
04.31	Describe the steps in performing various mobile procedures.
04.32	Describe the special problems faced in performing procedures on a patient with a tracheotomy and specific tubes, drains, and catheters.
04.33	Describe the procedure for producing diagnostic images in the surgical suite.
04.34	Explain the appropriate radiation protection required when performing mobile/surgical radiography.
05.0	Demonstrate an understanding of pharmacology and venipuncture procedures as it relates to radiologic science. – The student will be able to:
05.01	Distinguish between the chemical, generic and trade names of various drugs.
05.02	Describe the pharmacokinetic, pharmacodynamics, and pharmacogenetic principles of drugs.
05.03	Explain the uses and impact on the patient of different categories of drugs.
05.04	Define the categories of contrast agents and give specific examples for each category.
05.05	Explain the pharmacology of contrast agents.
05.06	Describe methods and techniques for administering various types of contrast agents.
05.07	Identify and describe the routes of drug administration.

06.0	Demonstrate proficiency in the skills, techniques and knowledge required for image analysis. – The student will be able to:
06.01	Discuss the elements of a radiographic image.
06.02	Identify anatomy on radiographic images.
06.03	Apply a problem-solving process used for image analysis.
06.04	Describe an effective image analysis method.
06.05	Describe the role of the radiographer in image analysis.
06.06	Apply the process for evaluating images for adequate image receptor exposure, exposure indicator, contrast/greyscale/spatial resolution, identification markers, and appropriate use of beam restriction.
06.07	Summarize the importance of proper positioning.
06.08	Discuss the impact of patient preparation on the resulting radiographic image.
06.09	Identify common equipment malfunctions that affect image quality, and corrective action.
06.10	Differentiate between technical factor problems, procedural factor problems and equipment malfunctions.
06.11	Critique images for appropriate technical, procedural and pathologic factors, and employ corrective actions if necessary.
06.12	Differentiate images produced by various modalities.
06.13	Apply a process for evaluating images for acceptable limits of distortion, image artifacts, radiation fog, noise, and gross exposure.
07.0	Demonstrate proficiency in the skills, techniques and knowledge required to operate imaging equipment. – The student will be able to:
07.01	Describe potential difference, current and resistance.
07.02	Describe the general components and functions of the tube and filament circuits.
07.03	Compare generators in terms of radiation produced and efficiency.
07.04	Discuss mobile and fixed radiographic equipment in terms of purpose, components, types and applications.
07.05	Demonstrate operation of various types of permanently fixed and mobile radiographic equipment.
07.06	Discuss fixed, fluoroscopy, and mobile equipment in terms of purpose, components, types, and applications.
07.07	Describe the components and function of automatic exposure control (AEC) devices.
07.08	Demonstrate proper use of AEC devices.

07.09	Describe the components of diagnostic x-ray tubes.
07.10	Explain methods used to extend x-ray tube life.
07.11	Explain image-intensified, flat panel, and pulsed fluoroscopy.
07.12	Indicate the purpose, construction, and application of fluoroscopic monitor.
07.13	Differentiate between quality assurance (QA) and quality control (QC).
07.14	List the benefits of a quality control management to the patient and to the department.
07.15	Evaluate the results of standard QC tests.
07.16	Discuss the image appearance and basic principles of operation for equipment used in various imaging modalities.
07.17	Describe continuous quality improvement (CQI).
07.18	Describe the components of the various types of display monitors.
07.19	Compare monitor types (e.g. acquisition, display).
07.20	Discuss quality control (QC) for imaging equipment and accessories.
07.21	Discuss the appropriate use of electronic masking.
07.22	Recognize and compare basic equipment used in various imaging modalities.
08.0	Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including x-ray production, image formation, and factors related to radiographic quality. – The student will be able to:
08.01	Discuss practical considerations in setting standards for acceptable image quality.
08.02	Assess radiographic exposure on radiographic images.
08.03	Analyze the relationships of factors that control and affect image exposure.
08.04	Critique the radiographic contrast within various radiographic images.
08.05	Analyze the relationship of factors that control and affect radiographic contrast.
08.06	Critique spatial resolution on various radiographic images.
08.07	Analyze the relationships of factors that control and affect spatial resolution.
08.08	Differentiate between size and shape distortion.

08.09	Perform calculations to determine image magnification and percent magnification.
08.10	Summarize the relationship of factors that control and affect distortion.
08.11	Explain the rationale for using beam restriction.
08.12	Describe the operation and applications for different types of beam restriction devices.
08.13	Explain how beam filtration affects x-ray beam intensity, beam quality and patient exposure.
08.14	Describe the change in the half-value layer (HVL) when filtration is added or removed.
08.15	Describe the impact of sampling frequency on spatial resolution.
08.16	Define sampling frequency.
08.17	Describe the impact of detector element size on spatial resolution.
08.18	Describe the Nyquist-Shannon theorem as it relates to sampling frequency.
08.19	Describe the process of image stitching.
09.0	Demonstrate an understanding of the structure and function of the human body with a focus on the muscular, endocrine, respiratory, urinary and appendicular skeletal systems. – The student will be able to:
09.01	Discuss the basics of anatomical nomenclature.
09.02	Classify tissue types, describe the functional characteristics of each and give examples of their location within the human body.
09.03	Describe the composition and characteristics of bone.
09.04	Identify and locate the bones of the human skeleton.
09.05	Identify bony processes and depressions found on the human skeleton.
09.06	Summarize the functions of the skeletal system.
09.07	Label different types of articulations.
09.08	Compare the types, locations and movements permitted by the different types of articulations.
09.09	Examine how muscle is organized at the gross and microscopic levels.
09.10	Differentiate between the structures of each type of muscle tissue.
09.11	State the function of each type of muscle tissue.

09.12	Name and locate the major muscles of the skeleton.
09.13	Define endocrine.
09.14	Describe the characteristics and functions of the components that comprise the endocrine system.
09.15	Differentiate between peritoneum, omentum, and mesentery.
09.16	Label the components of the respiratory system.
09.17	Describe the physiology and regulation of respiration.
09.18	Label the parts of the kidneys, ureters, bladder and urethra.
09.19	Describe the function of each organ of the urinary system.
09.20	Describe the composition and formation of urine.
09.21	Explain micturition.
09.22	Identify major sectional anatomical structures found within the head and neck, thorax, and abdomen.
10.0	Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate radiographic procedures. – The student will be able to:
10.01	Describe standard positioning terms.
10.02	Demonstrate proper use of positioning aids.
10.03	Discuss general procedural considerations for radiographic exams.
10.04	Identify methods and barriers of communication and describe how each may be used or overcome effectively during patient education.
10.05	Explain radiographic procedures to patients/family members.
10.06	Modify directions to patients with various communication problems.
10.07	Develop an awareness of cultural factors that necessitate adapting standard exam protocols.
10.08	Adapt general procedural considerations to specific clinical settings.
10.09	Identify the structures demonstrated on routine radiographic images.
10.10	Adapt radiographic procedures for special considerations.
10.11	Simulate radiographic procedures on a person or phantom in a laboratory or clinical setting.

10.12	Evaluate images for positioning, centering, appropriate anatomy and overall image quality.
10.13	Discuss equipment and supplies necessary to complete basic radiographic procedures.
10.14	Explain the routine and special positions and projections for all radiographic procedures.
10.15	Describe the general purpose of radiographic studies.
10.16	Apply general radiation safety and protection practices associated with radiographic examinations.
10.17	Define region of interest (ROI).
10.18	Define basic terms related to indications and contraindications related to imaging studies.
11.0	Demonstrate the proficiency in the skills and knowledge required of clinical practice. – The student will be able to:
11.01	Exercise the priorities required in daily clinical practice.
11.02	Execute medical imaging procedures under the appropriate level of supervision.
11.03	Adhere to team practice concepts that focus on organizational theories, roles of team members and conflict resolution.
11.04	Adapt to changes and varying clinical situations.
11.05	Describe the role of health care team members in responding/reacting to a local or national emergency.
11.06	Provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity, or culture.
11.07	Integrate the use of appropriate and effective written, oral and nonverbal communication with patients, the public and members of the health care team in the clinical setting.
11.08	Integrate appropriate personal and professional values into clinical practice.
11.09	Recognize the influence of professional values on patient care.
11.10	Explain how a person's cultural beliefs toward illness and health affect his or her health status.
11.11	Use patient and family education strategies appropriate to the comprehension level of the patient/family.
11.12	Provide desired psychosocial support to the patient and family.
11.13	Demonstrate competent assessment skills through effective management of the patient's physical and mental status.
11.14	Respond appropriately to medical emergencies.
11.15	Examine demographic factors that influence patient compliance with medical care.

11.16	Adapt procedures to meet age-specific, disease-specific and cultural needs of patients.
11.17	Assess the patient and record clinical history.
11.18	Demonstrate basic life support procedures.
11.19	Use appropriate charting/electronic documentation methods.
11.20	Recognize life-threatening electrocardiogram (ECG) tracing.
11.21	Apply standard and transmission-based precautions.
11.22	Apply the appropriate medical asepsis and sterile technique.
11.23	Demonstrate competency in the principles of radiation protection standards.
11.24	Apply the principles of total quality management.
11.25	Report equipment malfunctions.
11.26	Examine procedure orders for accuracy and make corrective actions when applicable.
11.27	Demonstrate safe, ethical and legal practices.
11.28	Integrate the radiographer's practice standards into clinical practice setting.
11.29	Maintain patient confidentiality standards and meet HIPAA requirements.
11.30	Demonstrate the principles of transferring, positioning and immobilizing patients.
11.31	Comply with departmental and institutional response to emergencies, disasters and accidents.
11.32	Differentiate between emergency and non-emergency procedures.
11.33	Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors.
11.34	Select technical factors to produce quality diagnostic images with the lowest radiation exposure possible.
11.35	Critique images for appropriate anatomy, image quality and patient identification.
11.36	Determine corrective measures to improve inadequate images.
12.0	Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including image acquisition and processing, scatter radiation control, and image evaluation. – The student will be able to:
12.01	Summarize the relationship of factors affecting scattered radiation.



12.02	Evaluate the effects of scattered radiation on the image.
12.03	Compare grid types.
12.04	Select the most appropriate grid for a given clinical situation.
12.05	Interpret grid efficiency in terms of grid ratio and frequency.
12.06	Summarize the factors that influence grid cutoff.
12.07	Evaluate grid artifacts.
12.08	Explain the use of radiographic technique charts.
12.09	Explain exposure factor considerations involved in selecting techniques.
12.10	Compare fixed kilovoltage peak (kVp) and variable kVp systems.
12.11	Apply the reciprocity law to clinical situations.
12.12	Apply conversion factors for changes in the following areas: distance, grid, image receptors, reciprocity law, and 15 percent rule.
13.0	Demonstrate an understanding of the concepts and equipment required of digital image acquisition and display. – The student will be able to:
13.01	Define terminology associated with digital imaging systems.
13.02	Describe the various types of digital receptors.
13.03	Describe the response of digital detectors to exposure variations.
13.04	Compare the advantages and limits of each receptor type.
13.05	Evaluate the spatial resolution of a digital imaging system.
13.06	Describe the histogram and the process or histogram analysis as it relates to automatic rescaling and determining an exposure indicator.
13.07	Relate the receptor exposure indicator values to technical factors, system calibration, part/beam/plate alignment and patient exposure.
13.08	Describe the response of PSP systems to background and scatter radiation.
13.09	Use appropriate means of scatter control.
13.10	Avoid grid use errors associated with grid cutoff and Moiré effect.
13.11	Identify common limitations and technical problems encountered when using PSP systems.

13.12	Employ appropriate beam/part/receptor alignment to avoid histogram analysis errors.
13.13	Associate impact of image processing parameters to the image appearance.
13.14	Apply the fundamental principles of radiographic exposure to digital detectors.
13.15	Evaluate the effect of a given exposure change on histogram shape, data width, and image appearance.
13.16	Describe the conditions that cause quantum mottle in a digital image.
13.17	Formulate a procedure or process to minimize histogram analysis and rescaling errors.
13.18	Examine the potential impact of digital radiographic systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
13.19	Describe picture archival and communications system (PACS) and its function.
13.20	Identify components of a PACS.
13.21	Define digital imaging and communications in medicine (DICOM).
13.22	Describe HIPAA concerns with electronic information.
13.23	Identify common problems associated with retrieving/viewing images within a PACS.
13.24	Describe the calculation of the exposure indicator (AAPM Task Group 116).
13.25	Relate how the values of interest (VOI) impact image appearance.
13.26	Describe signal to noise (SNR) as it relates to digital radiography detectors.
13.27	Describe modulation transfer function (MTF) as it relates to digital radiography detectors.
13.28	Describe contrast to noise (CNR) as it relates to digital radiography detectors.
13.29	Describe detective quantum efficiency (DQE) for digital radiography detectors.
13.30	Describe display monitor aspect ratio and its impact on image display.
13.31	Identify critical components of the DICOM header.
13.32	Relate the location and size of the ROI to the appearance of the image and exposure indicator.
13.33	Discuss the impact of viewing angle, luminance, ambient lighting, and pixel size on image display.
14.0	Demonstrate an understanding of the structure and function of the human body with a focus on the axial skeletal system. – The student will be able to:

14.01	Describe articulations of the axial skeleton.
14.02	Differentiate the primary and secondary curves of the spine.
14.03	Identify and locate the bones of the human axial skeleton.
14.04	Identify bony processes and depressions found on the human axial skeleton.
14.05	Summarize the functions of the axial skeletal system.
14.06	Label different types of articulations specific to the axial skeletal system.
15.0	Demonstrate an understanding of the structure and function of the human body with a focus on the circulatory/cardiovascular, digestive, and reproductive systems. – The student will be able to:
15.01	Describe the composition and characteristics of blood.
15.02	List the types of blood cells and state their functions.
15.03	Differentiate between blood plasma and serum.
15.04	Outline the clotting mechanism.
15.05	List the blood types.
15.06	Explain the term Rh factor.
15.07	Explain the antigen/antibody relationship and its use in blood typing.
15.08	Label the parts of the human heart.
15.09	Describe the flow of blood through the body and identify the main vessels.
15.10	Describe the structure and function of arteries, veins and capillaries.
15.11	Differentiate between arterial blood in systemic circulation and arterial blood in pulmonary circulation.
15.12	Outline the major pathways of lymphatic circulation.
15.13	Correlate cardiac electrophysiology to a normal ECG tracing.
15.14	Label the anatomy of the male and female reproductive organs.
15.15	Analyze the function of each of the male and female reproductive organs.
15.16	Describe the structures and functions of the components that comprise the human eye and ear.

15.17	List the component body parts involved in the senses of smell and taste.
15.18	List the somatic senses.
15.19	Describe the hard and soft palates.
15.20	Describe the structure and function of the tongue.
15.21	Identify the structure, function and locations of the salivary glands.
15.22	List and label the accessory organs of the digestive system and describe their function.
15.23	Describe the composition and characteristics of the primary organs of the digestive system.
15.24	Describe the function(s) of each primary organ of the digestive system.
15.25	Differentiate between the layers of tissue that comprise the esophagus, stomach, small intestine, large intestine, and rectum.
15.26	Identify the secretions and function of each accessory organ of the digestive system.
15.27	Explain the purpose of digestion.
15.28	List the digestive processes that occur in the body.
16.0	Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate fluoroscopic procedures. – The student will be able to:
16.01	Identify the structures demonstrated on routine fluoroscopic images.
16.02	Adapt fluoroscopic procedures for special considerations.
16.03	Simulate fluoroscopic procedures on a person or phantom in a laboratory setting.
16.04	Evaluate images for positioning, centering, appropriate anatomy and overall image quality.
16.05	Discuss equipment and supplies necessary to complete basic fluoroscopic procedures.
16.06	Explain the patient preparation necessary for various contrast and special studies.
16.07	Explain the routine and special positions/projections for all fluoroscopic procedures.
16.08	Explain the purpose for using contrast media.
16.09	Name the type, dosage and route of administration of contrast media commonly used to perform radiographic contrast and special studies.
16.10	Describe the general purpose of fluoroscopic studies.

16.11	Apply general radiation safety and protection practices associated with fluoroscopic examinations.
17.0	Demonstrate an understanding of the structure and function of the human body with a focus on the nervous system. – The student will be able to:
17.01	Differentiate between the structure and function of different types of nerve cells.
17.02	State the structure of the brain and the relationship of its component parts.
17.03	Describe brain functions.
17.04	List the meninges and describe the function of each.
17.05	Outline how cerebrospinal fluid forms, circulates and functions.
17.06	Describe the structure and function of the spinal cord.
17.07	Determine the distribution and function of cranial and spinal nerves.
17.08	Summarize the structure and function of components that comprise the autonomic nervous system.
18.0	Demonstrate introductory knowledge of computed tomography. – The student will be able to:
18.01	Explain the difference between reconstructing and reformatting an image.
18.02	Cite the structures demonstrated on commonly performed CT images.
18.03	Describe commonly performed CT procedures.
18.04	Evaluate images for positioning, centering, appropriate anatomy and overall image quality.
18.05	Discuss equipment and supplies necessary to complete commonly performed CT procedures.
18.06	Explain the CT acquisition protocol for commonly performed head/neck, thorax, and abdomen procedures.
18.07	Explain the patient preparation necessary for commonly performed CT contrast studies.
18.08	Name the type, dosage purpose, and route of contrast administration for common CT procedures.
18.09	Describe the components of the CT imaging system.
18.10	Explain the functions of collimators in CT.
18.11	List the CT computer data processing steps.
18.12	Define algorithm and explain its impact on image scan factors and reconstruction.

18.13	Define raw data and image data.
18.14	Describe the following terms in relation to the CT data acquisition process: <ul style="list-style-type: none"> <li>a. Pixel.</li> <li>b. Matrix.</li> <li>c. Voxel.</li> <li>d. Linear attenuation coefficient.</li> <li>e. CT/Hounsfield number.</li> <li>f. Partial volume averaging.</li> <li>g. Window width (ww) and window level (wl).</li> <li>h. Spatial resolution.</li> <li>i. Contrast resolution.</li> <li>j. Noise.</li> <li>k. Annotation.</li> <li>l. Region of interest (ROI).</li> </ul>
18.15	Name the common controls found on CT operator consoles and describe how and why each is used.
18.16	Identify the types and appearance of artifacts most commonly affecting CT images.
18.17	Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.
18.18	Describe the general purpose of commonly performed CT studies.
18.19	Discuss general radiation safety and protection practices associated with examinations in CT.
19.0	Demonstrate appropriate venipuncture technique. – The student will be able to:
19.01	Differentiate between the two major sites of intravenous drug administration.
19.02	Identify, describe and document complications associated with venipuncture and appropriate actions to resolve these complications.
19.03	Discuss the various elements of initiating and discontinuing intravenous access.
19.04	Differentiate and document dose calculations for adult and pediatric patients.
19.05	Prepare for injection of contrast agents/intravenous medications using aseptic technique.
19.06	Explain the current legal status and professional liability issues of the radiographer's role in contrast and/or drug administration.
19.07	Simulate appropriate venipuncture technique.
20.0	Demonstrate an understanding of radiographic pathology. – The student will be able to:
20.01	Define basic terms related to pathology.

20.02	Describe the basic manifestations of pathological conditions and their relevance to radiologic procedures.
20.03	Discuss the classifications of trauma.
20.04	Describe imaging procedures used in diagnosing disease.
20.05	List the causes of tissue disruption.
20.06	Describe the healing process.
20.07	Identify complications connected with the repair and replacement of tissue.
20.08	Describe the various systemic classifications of disease in terms of etiology, types, common sites, complications, and prognosis.
20.09	Describe the radiographic appearance of diseases.
20.10	Identify imaging procedures and interventional techniques appropriate for diseases common to each body system.
20.11	Identify diseases caused by or connected to genetic factors.
21.0	Demonstrate an understanding of how radiation is produced and the characteristics of different classifications of radiation. – The student will be able to:
21.01	Describe fundamental atomic structure.
21.02	Describe the electromagnetic spectrum.
21.03	Describe wavelength and frequency and how they are related to velocity.
21.04	Explain the relationship of energy, wavelength and frequency.
21.05	Explain the wave-particle duality phenomena.
21.06	Identify the properties of x-rays.
21.07	Describe the processes of ionization and excitation.
21.08	Describe particulate radiation.
21.09	Differentiate between ionizing and nonionizing radiation.
21.10	Describe radioactivity and radioactive decay in terms of alpha, beta and gamma emission.
21.11	Compare the production of bremsstrahlung and characteristic radiations.
21.12	Describe the conditions necessary to produce x-radiation.

21.13	Describe the x-ray emission spectrum.
21.14	Explain the factors that affect the x-ray emission spectrum.
21.15	Discuss various photon interactions with matter.
21.16	Discuss relationships of wavelength and frequency to beam characteristics.
21.17	Discuss the clinical significance of the photoelectric and modified scattering (Compton) interactions in diagnostic imaging.
21.18	Compare and contrast different types of radiation.
22.0	Demonstrate an understanding of the structure and function of the human body including the immune system and chemical composition of the body. – The student will be able to:
22.01	Describe the chemical composition of the human body.
22.02	Identify cell structure and elements of genetic control.
22.03	Explain the essentials of human metabolism.
22.04	Differentiate between nonspecific defenses and specific immunity.
22.05	Explain antibody production and function.
22.06	List the different types and functions of T- and B-cells and explain their functions.
23.0	Demonstrate an understanding of the integral aspects of radiation biology required of a radiographer. – The student will be able to:
23.01	Differentiate between ionic and covalent molecular bonds.
23.02	Describe principles of cellular biology.
23.03	Identify sources of electromagnetic and particulate ionizing radiations.
23.04	Discriminate between the direct and indirect effects of radiation.
23.05	Identify sources of radiation exposure.
23.06	Describe radiation-induced chemical reactions and potential biologic damage.
23.07	Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.
23.08	Identify methods to measure radiation response.
23.09	Describe physical, chemical and biologic factors influencing radiation response of cells and tissues.



23.10	Explain factors influencing radiosensitivity.
23.11	Recognize the clinical significance of lethal dose (LD).
23.12	Identify the radiosensitivity and radioresistency of specific cells.
23.13	Employ dose response curves to study the relationship between radiation dose levels and the degree of biologic response.
23.14	Examine effects of limited vs. total body exposure.
23.15	Relate short-term and long-term effects as a consequence of high and low radiation doses.
23.16	Differentiate between somatic and genetic radiation effects and discuss specific diseases or syndromes associated with them.
23.17	Discuss stochastic and deterministic effects.
23.18	Discuss embryonic and fetal effects of radiation exposure.
23.19	Discuss risk estimates for radiation-induced malignancies.
23.20	Discuss acute radiation syndromes.
23.21	Define basic terms related to dose differences.
24.0	Convey the importance for proper radiation protection and the precautions radiographers should take to prevent unnecessary exposure to themselves and patients. – The student will be able to:
24.01	Identify and justify the need to minimize unnecessary radiation exposure of humans.
24.02	Explain the objectives of a radiation protection program.
24.03	Define radiation and radioactivity units of measurement.
24.04	Identify effective dose limits (EDL) for occupational and non-occupational radiation exposure.
24.05	Describe the ALARA concept.
24.06	Identify the basis for occupational exposure limits.
24.07	Distinguish between perceived risk and comparable risk.
24.08	Describe the concept of the negligible individual dose (NID).
24.09	Identify ionizing radiation sources from natural and man-made sources.
24.10	Comply with legal and ethical radiation protection responsibilities of radiation workers.

24.11	Describe the relationship between irradiated area and effective dose.
24.12	Describe the theory and operation of radiation detection devices.
24.13	Identify appropriate applications and limitations for each radiation detection device.
24.14	Describe how isoexposure curves are used for radiation protection.
24.15	Identify performance standards for beam-limiting devices.
24.16	Describe procedures used to verify performance standards for equipment.
24.17	Describe the operation of various interlocking systems for equipment.
24.18	Identify conditions and locations evaluated in an area survey for radiation protection.
24.19	Distinguish between controlled and non-controlled areas and list acceptable exposure levels.
24.20	Describe "Radiation Area" signs and identify appropriate placement sites.
24.21	Describe the function of federal, state and local regulations governing radiation protection practices.
24.22	Describe the qualifications and responsibilities of a radiation safety officer.
24.23	Express the need and importance of personnel monitoring for radiation workers.
24.24	Describe personnel monitoring devices, including applications, advantages and limitations for each device.
24.25	Interpret personnel monitoring reports.
24.26	Compare values for individual effective dose limits for occupational radiation exposures (annual and lifetime).
24.27	Identify effective dose limits for the embryo and fetus in occupationally exposed women.
24.28	Distinguish between primary and secondary radiation barriers.
24.29	Demonstrate how the operation of various x-ray and ancillary equipment influences radiation safety and describe the potential consequences of equipment failure.
24.30	Perform calculations of exposure with varying time, distance and shielding.
24.31	Discuss the relationship between workload, energy, half-value layer (HVL), tenth-value layer (TVL), use factor and shielding design.
24.32	Identify emergency procedures to be followed during failures of x-ray equipment.
24.33	Demonstrate how time, distance and shielding can be manipulated to keep radiation exposures to a minimum.

24.34	Explain the relationship of beam-limiting devices to patient radiation protection.
24.35	Discuss added and inherent filtration in terms of the effect on patient dosage.
24.36	Explain the purpose and importance of patient shielding.
24.37	Identify various types of patient shielding and state the advantages and disadvantages of each type.
24.38	Use the appropriate method of shielding for a given radiographic or fluoroscopic procedure.
24.39	Explain the relationship of exposure factors to patient dosage.
24.40	Explain how patient position affects dose to radiosensitive organs.
24.41	Identify the appropriate image receptor that will result in an optimum diagnostic image with the minimum radiation exposure to the patient.
24.42	Select the immobilization techniques used to eliminate voluntary motion.
24.43	Describe the minimum source-to-tabletop distances for fixed and mobile fluoroscopic devices.
24.44	Apply safety factors for the patient, health care personnel and family members in the room during radiographic/fluoroscopic procedures.

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## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Radiographers provide patient services using imaging modalities, as directed by physicians qualified to order and/or perform radiologic procedures. Radiographers usually provide patient care essential to radiologic procedures, including exercising judgment when performing medical imaging procedures. When providing patient services, the radiographer adheres to the principles of radiation protection for the patient, self, and others.

Radiographers accurately demonstrate anatomical structures on various imaging receptors by knowledge of anatomy, positioning, radiographic technique, and radiation protection. Radiographers must also be able to recognize emergency patient conditions and initiate lifesaving first aid. Additional duties may include performing quality assurance, processing film, and keeping patient records. Radiographers may be required to perform some of these duties at the patient's bedside or in the operating room.

The policies and process by which students receive clinical education shall be published and made known to all concerned in order to avoid practices in which students are substituted for paid staff. Students shall not take the responsibility or the place of qualified staff. After demonstrating competency, students may be permitted to perform procedures with indirect supervision. Unsatisfactory radiographs shall be repeated only in the presence of a qualified radiographer.

Students are encouraged to become members of their appropriate professional organizations such as the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Medical Laboratory Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351100405
Program Type	College Credit
Standard Length	76 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2011 Medical and Clinical Laboratory Technologists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as medical/clinical laboratory technologist SOC Code 29-2011 (medical clinical laboratory technologist) or medical laboratory technologists (associate degree) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to specific techniques and instruments, identification of factors directly affecting procedures and results, confirmation of results and monitoring quality control programs within pre-determined parameters, and correction of errors using pre-set standards. A clinical component is a necessary element of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 76 credit hours.

## **Regulated Programs**

**This program is regulated by the Florida Board of Clinical Laboratory Personnel.**

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills.
- 13.0 Discuss phlebotomy in relation to the health care setting.
- 14.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
- 15.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 16.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 17.0 Practice infection control following standard precautions.
- 18.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 19.0 Practice quality assurance and safety.
- 20.0 Demonstrate knowledge and use of basic laboratory equipment and techniques.
- 21.0 Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).
- 22.0 Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.
- 23.0 Discuss the general responsibilities and functions encountered by a medical technician.
- 24.0 Apply quality assurance principles and safety protocols.
- 25.0 Demonstrate knowledge of the operation of computer systems.
- 26.0 Demonstrate an understanding of the basic principles of molecular diagnostics.
- 27.0 Demonstrate knowledge of urinalysis and body fluids principles and procedures.
- 28.0 Demonstrate knowledge of hematological principles and procedures.
- 29.0 Demonstrate knowledge of hemostasis and related diagnostic principles and procedures.
- 30.0 Demonstrate knowledge of immunology principles and procedures.
- 31.0 Demonstrate knowledge of clinical chemistry principles and procedures.
- 32.0 Demonstrate knowledge of immunohematology principles and procedures.
- 33.0 Demonstrate knowledge of microbiological principles and procedures.

- 34.0 Demonstrate knowledge of advanced hematological principles and procedures.
- 35.0 Demonstrate knowledge of advanced hemostasis testing.
- 36.0 Demonstrate knowledge of advanced microbiological principles and procedures.
- 37.0 Demonstrate knowledge of advanced clinical chemistry principles and procedures.
- 38.0 Demonstrate knowledge of advanced immunological procedures.
- 39.0 Demonstrate knowledge of advanced immunohematology principles and procedures.
- 40.0 Demonstrate and understanding of advanced principles of molecular diagnostics.



Florida Department of Education  
Student Performance Standards

**Program Title:** Medical Laboratory Technology  
**CIP Number:** 1351100405  
**Program Length:** 76 credit hours  
**SOC Code(s):** 29-2011

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

**Phlebotomy: (12-19)**

12.0 Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:

12.01 Demonstrate the appropriate professional behavior of a phlebotomist.

12.02 Explain to the patient the procedure to be used in specimen collection.

12.03 Explain in detail the importance of identifying patients correctly when drawing blood.

12.04 Describe the scope of practice (job skills and duties) for a phlebotomist.

12.05 List and describe professional organizations that provide accreditation for phlebotomy programs and provide certification for phlebotomists.

12.06 Explain the importance of continuing education in relation to certification to maintain competency and skills.

13.0 Discuss phlebotomy in relation to the health care setting. – The student will be able to:

13.01 List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.

13.02 Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.

	13.03 Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
	14.01 Describe and define major body systems with emphasis on the circulatory system.
	14.02 List and describe the main superficial veins used in performing venipuncture.
	14.03 Locate the most appropriate sites(s) for capillary and venipuncture.
	14.04 Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes, and plasma.
	14.05 Compare and contrast between serum and plasma as it relates to blood collection.
	14.06 Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment, and interfering chemical substances. – The student will be able to:
	15.01 Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
	15.02 Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
	15.03 Identify and discuss proper use of supplies used in collecting micro-specimens.
	15.04 Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
	15.05 Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
	15.06 Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
	15.07 Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
	16.01 Follow approved procedure for completing a laboratory requisition form.
	16.02 Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.
	16.03 Demonstrate knowledge of established protocol for patient and specimen identification.
	16.04 Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
	16.05 List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.

16.06	Know how to perform venipuncture by evacuated tube, butterfly and syringe systems.
16.07	Describe the correct order of draw according to CLSI guidelines.
16.08	Describe the use of barcoding systems used for positive patient identification and specimen identification.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term "hospital acquired infection".
17.02	Demonstrate proper hand hygiene.
17.03	Comply with universal/standard precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:
19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.

19.02	Demonstrate knowledge of and practice appropriate patient safety.
19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.
19.04	Follow documentation procedures for work related accidents.
19.05	Understand Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.
<b>Medical Laboratory Technician: (20-33)</b>	
20.0	Demonstrate knowledge and use of basic laboratory equipment and techniques. -- The student will be able to:
20.01	Identify the parts of the microscope and explain the function of each.
20.02	Demonstrate the proper technique for operation of the microscope.
20.03	Demonstrate use of standard laboratory equipment including glassware, pipettes and centrifuge.
20.04	Perform basic laboratory math calculations.
20.05	Understand the principles of quality assurance to correct problems encountered in monitoring daily quality control.
20.06	Evaluate laboratory findings to confirm results according to standard operating procedure.
20.07	Demonstrate knowledge of principles and operation of laboratory instruments.
21.0	Demonstrate the basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived). -- The student will be able to:
21.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:
21.01.01	Test principle
21.01.02	Storage & Stability
21.01.03	Internal vs. External Quality Control
21.01.04	Specimen collection & preparation
21.01.05	Directions for use
21.01.06	Interpretation of results
21.01.07	Interfering substances
21.02	Demonstrate and discuss knowledge of lot numbers use and importance in regard to both kits and reagents.

21.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.
21.04	Explain the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.
22.0	Demonstrate basic knowledge of and perform point of care (POC) testing using CLIA approved waived instrumentation. -- The student will be able to:
22.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.
22.02	Perform instrument maintenance.
22.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.
22.04	Identify normal limits and associate abnormal results with disease or disorders.
22.05	Discuss the significance of reporting critical values as it applies to point of care testing.
23.0	Discuss the general responsibilities and functions encountered by a medical technician.– The students will be able to:
23.01	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
23.02	Communicate laboratory results to healthcare professionals.
23.03	Demonstrate ability to evaluate laboratory results.
23.04	Demonstrate ability to report laboratory results in written or oral form.
23.05	Discuss the licensure and certification requirements of the major classifications of clinical laboratory personnel.
24.0	Apply quality assurance principles and safety protocols–The student will be able to:
24.01	Assess specimen acceptability using standard operating procedure including rejection/recollection criteria.
24.02	Describe procedures for transporting and processing specimens.
24.03	Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance of equipment.
24.04	Understand the need for calibration of laboratory equipment.
24.05	Demonstrate and record quality control procedures required for the tests performed and recognize unacceptable results.
24.06	Report identified problems encountered in daily quality control according to standard operating procedures.
24.07	Comply with current OSHA regulations regarding laboratory hazards.
25.0	Demonstrate knowledge of the operation of computer systems. – The student will be able to:

25.01	Discuss the role of computer systems in laboratory data management.
25.02	Demonstrate knowledge of common computer terminology.
25.03	Demonstrate entry level computer operations for specimen accessioning, data reporting, and quality control recording.
25.04	Demonstrate entry level operational skills in the use of computer-interfaced analytical instrumentation.
26.0	Demonstrate an understanding of the basic principles of molecular diagnostics. -- The student will be able to:
26.01	Discuss the principles and major steps of the polymerase chain reaction (PCR).
26.02	Label the organelles and important parts of a eukaryotic animal cell.
26.03	Describe the function of the organelles and important parts of a eukaryotic animal cell.
26.04	Discuss the structure, function, and components of DNA and RNA.
26.05	Define the key terms of molecular diagnostics.
26.06	Understand the principles of molecular diagnostic testing.
26.07	Compare the advantages and disadvantages of molecular techniques over traditional diagnostic tests for infectious diseases.
26.08	List molecular tests associated with the identification of microorganisms.
26.09	Identify the types of samples appropriate for molecular diagnostics.
26.10	Discuss the ethical impact of genetic technologies.
26.11	Outline requirements for reducing contamination in a molecular lab.
26.12	Discuss nucleic acid probes and their role in clinical laboratory diagnostics.
27.0	Demonstrate knowledge of urinalysis and body fluids principles and procedures. – The student will be able to:
27.01	Identify the components of the urinary system and explain their functions.
27.02	Discuss diseases affecting the urinary system.
27.03	Describe collection, transport and storage procedures for random and timed urine specimens.
27.04	Discuss specific gravity techniques; calibration and use of the refractometer.
27.05	Perform dipstick or tablet (non-automated) urinalysis techniques for chemical exam of the urine and interpret results

27.06	Demonstrate the proper use of automated urinalysis analyzers.
27.07	Describe renal function tests.
27.08	Describe principles of and perform routine physical and chemical analyses on urine.
27.09	Prepare urine sediments and perform identification and quantitation of microscopic formed elements.
27.10	Correlate abnormal physical, chemical and microscopic urine results with associated pathological conditions.
27.11	Differentiate between transudates and exudates.
27.12	Discuss miscellaneous body fluids to include cerebral spinal, serous, seminal and joint fluids.
27.13	Perform physical, chemical and microscopic evaluations of common body fluids.
28.0	Demonstrate knowledge of hematological principles and procedures. – The student will be able to:
28.01	Discuss the organs, cells and cellular interaction of the lymphoid, myeloid and reticuloendothelial systems.
28.02	Demonstrate an understanding of basic concepts of hematopoiesis.
28.03	Identify the components of blood.
28.04	Discuss the function of formed elements of blood.
28.05	Demonstrate an understanding of the synthesis of normal and abnormal molecular structure of hemoglobin, common hemoglobinopathies, and associated tests.
28.06	Describe normal hemoglobin-oxygen function using the oxygen dissociation curve (ODC).
28.07	Discuss assessment and impact of preanalytical, analytical, and post-analytical factors on hematology testing.
28.08	Calculate red blood cell indices.
28.09	Discuss selected cytochemical staining and flow cytometry procedures.
28.10	Evaluate red blood cell morphology.
28.11	State the review process of histogram/scatterplot/scatter gram analysis.
28.12	Describe the categories used in a morphological classification of anemias.
28.13	Correlate complete blood cell results with peripheral exam of blood smear.
28.14	List the white blood cell maturation sequence and identify distinguishing morphology for stages of developing white blood cells.

28.15	Discuss normal and abnormal hematology findings, reference ranges and associated diseases.
28.16	Demonstrate an understanding of normal and abnormal white cell morphology, related disease states and associated tests.
28.17	Discuss the principles of and perform routine hematology procedures applying quality control procedures.as necessary.
28.18	Perform commonly used methods to evaluate leukocytes, correlate and verify automated cell counts with established criteria.
28.19	Identify characteristic findings of nonmalignant leukocytic disorders, e.g. shift to the left, toxic granulation, Döhle bodies, etc.
28.20	Perform techniques of manual blood smear evaluation including white blood cell differential, red cell and platelet morphology.
28.21	Correlate peripheral blood evaluation with automated cell analysis.
28.22	Perform platelet counts on patient and control specimens using manual and automated techniques and correlate counts with peripheral smear.
29.0	Demonstrate knowledge of hemostasis and related diagnostic principles and procedures. – The student will be able to:
29.01	Discuss and define the mechanisms of hemostasis including bleeding and clotting.
29.02	Discuss common coagulopathies and associated treatments.
29.03	Discuss assessment and impact of pre-analytical factors on hemostasis testing
29.04	Describe the principles of and perform routine testing used in the evaluation of primary and secondary hemostasis.
29.05	Discuss additional hemostasis tests performed to differentiate the cause of abnormal routine tests.
30.0	Demonstrate knowledge of immunology principles and procedures. – The student will be able to:
30.01	Discuss the functions of the cells of the immune system, cytokines and regulatory molecules.
30.02	Discuss physical and chemical properties of immunogens (antigens), immunoglobulins (antibodies) and complement
30.03	Compare and contrast the principles of basic agglutination, flocculation and precipitation procedures in immunology/serology.
30.04	Perform basic procedures in immunology/serology.
30.05	Discuss principles of serum protein electrophoresis and immunofixation.
30.06	Discuss the clinical significance of the commonly performed immunological tests.
30.07	Discuss selected serological tests such as immunoassays.
31.0	Demonstrate knowledge of clinical chemistry principles and procedures. – The student will be able to:



31.01	Identify the chemistry analytes used to evaluate various organ function.
31.02	Discuss the renal system and related analytes.
31.03	Discuss principles of and perform common renal function tests.
31.04	Discuss carbohydrate, protein and lipid metabolism.
31.05	Discuss principles of and perform commonly ordered tests related to carbohydrate, protein and lipid metabolism.
31.06	Discuss the liver and its functions and related analytes.
31.07	Discuss principles of and perform commonly ordered liver function tests.
31.08	Discuss enzyme classification, origin, activity and function.
31.09	Discuss principles of and perform commonly ordered enzyme procedures.
31.10	Discuss electrolyte balance as related to health and disease.
31.11	Discuss principles of and perform electrolyte analyses.
31.12	Discuss principles of and perform commonly ordered tests to evaluate cardiac function.
31.13	Discuss the physiology of the endocrine system and the principal tests used to evaluate endocrine function.
31.14	Discuss the role of the laboratory in therapeutic drug monitoring and toxicology.
31.15	Discuss and perform general electrophoresis techniques.
31.16	Discuss the clinical significance of commonly ordered clinical chemistry tests.
31.17	Demonstrate knowledge of principles of instrumentation as related to the clinical chemistry laboratory.
31.18	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards and controls.
31.19	Discuss other techniques of clinical chemistry.
31.20	Discuss basic techniques of clinical chemistry related to normal and abnormal physiology.
32.0	Demonstrate knowledge of immunohematology principles and procedures. – The student will be able to:
32.01	Discuss donor interview, criteria for selection, phlebotomy preparation, and donor blood processing.
32.02	Discuss blood component collection and, preparation, storage and use.

32.03	Describe the roles of FDA, AABB, and state agencies and how to contact each.
32.04	Compare advantages and disadvantages for autologous, versus homologous (allogenic) blood collection and transfusion.
32.05	Discuss basic genetics of the blood group antigens
32.06	Discuss the ABO blood group system testing procedures and recognize ABO discrepancies.
32.07	Describe required tests on recipient blood samples.
32.08	Discuss and differentiate other blood group systems such as Duffy, Kell, Kidd, S,s, Lu, and the common cold-reacting antibodies such as Le, P, I, M and N.
32.09	Perform Rh testing to determine Rh phenotypes.
32.10	Perform and interpret antibody screening.
32.11	Perform antibody identification tests to detect clinically significant antibodies.
32.12	Discuss the safety and determine compatibility of blood components for transfusion.
32.13	Discuss and perform routine compatibility testing including the immediate spin crossmatch and the electronic crossmatch.
32.14	Discuss and perform phenotyping on recipient and donor specimens.
32.15	Identify symptoms of the suspected transfusion reaction and the required laboratory work-up.
32.16	Discuss immune hemolytic disorders and perform the direct antiglobulin test.
32.17	Discuss specialized techniques.
32.18	Perform quality control (QC) on reagents.
32.19	Describe the pathophysiology of hemolytic disease of the fetus and newborn.
33.0	Demonstrate knowledge of microbiological principles and procedures. – The student will be able to:
33.01	Discuss microbial taxonomy and nomenclature.
33.02	Discuss bacterial metabolism, reproduction, cell structures and their functions.
33.03	Discuss classification, composition and preparation of culture media.
33.04	Discuss the human pathogenesis of bacteria.
33.05	Discuss and perform sterilization techniques.

33.06	Perform culturing techniques for urine, stool, wound, respiratory, body fluids, and blood specimens.
33.07	Perform techniques of microbiology related to inoculation and transfer of cultures.
33.08	Discuss the principles of Gram and AFB stains.
33.09	Accurately perform, read and report gram stains.
33.10	Perform techniques necessary for isolation and identification of aerobic and anaerobic bacterial organisms.
33.11	Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
33.12	Perform and interpret antimicrobial susceptibility tests.
33.13	Discuss collection and handling of specimens for fungal, mycobacterial and viral culture.
33.14	Prepare and examine specimens, and identify ova and parasites when present.
<p><b>Medical Laboratory Technology (Associate Degree) - The following intended outcomes (34-40), in addition to the outcomes for the program of Medical Laboratory Technology (Certificate), complete the competencies for the Medical Laboratory Technology (Associate Degree) program.</b></p>	
34.0	Demonstrate knowledge of advanced hematological principles and procedures. – The student will be able to:
34.01	Correlate histogram/scatterplot/scatter gram with differential results.
34.02	Describe the categories used in etiological classification of anemias.
34.03	Perform procedures, apply appropriate quality control procedures, recognize and follow up, within pre-established reporting guidelines, laboratory procedures used in the identification, classification and differentiation of neoplastic disorders.
34.04	Discuss the basic principles and applications of flow cytometry.
34.05	Discuss the principle of hemoglobin electrophoresis with pattern interpretation.
35.0	Demonstrate knowledge of advanced hemostasis testing. – The student will be able to:
35.01	Discuss the principle of mixing studies and factor assays.
35.02	Correlate the laboratory test results for fibrinolysis with conditions affecting the fibrinolytic system.
35.03	Perform additional hemostasis tests performed to differentiate the cause of abnormal routine tests.
35.04	Correlate laboratory results with possible inherited and/or acquired coagulation abnormalities.

36.0	Demonstrate knowledge of advanced microbiological principles and procedures. – The student will be able to:
36.01	Discuss procedures for anaerobic identification and clinical significance of anaerobes.
36.02	Classify fungi and state their clinical significance.
36.03	Perform techniques used in identifying fungi.
36.04	Identify pathogenic fungi.
36.05	Discuss and perform automated microbiological procedures.
36.06	Identify life cycles, modes of transmission, prevention and pathophysiology of clinically significant parasites.
36.07	Discuss microbial and immunological techniques to identify clinically significant viruses.
36.08	Discuss classification and related disease states of clinically significant viruses.
36.09	Identify commonly used antibiotics, their usage and mechanisms of activity.
37.0	Demonstrate knowledge of advanced clinical chemistry principles and procedures. – The student will be able to:
37.01	Perform, calculate, analyze and recognize normal/abnormal electrophoresis procedures.
37.02	Perform immunoassay procedures.
37.03	Perform and recognize associated disease states for selected isoenzyme assays.
37.04	Perform, calculate, and recognize associated disease states for blood lipid profiles.
37.05	Perform selected procedures related to endocrine function.
37.06	Perform selected assays for therapeutic and toxic substances.
37.07	Discuss the principles and procedures of blood gas analysis, including arterial specimen collection and clinical significance.
38.0	Demonstrate knowledge of advanced immunological procedures. – The student will be able to:
38.01	Perform serological tests such as immunofluorescence assays.
38.02	Discuss and interpret antinuclear antibody patterns and their relationship to disease states.
38.03	Discuss MHC and HLA proteins and the application to transplant technology and rejection.
39.0	Demonstrate knowledge of advanced immunohematology principles and procedures. – The student will be able to:

39.01	Understand questions regarding donor suitability.
39.02	Discuss the various parameters of required testing of donor blood according to AABB Standards.
39.03	Describe the preparation and use of washed red cells, leukocyte-reduced red cells and platelet concentrations from donor units.
39.04	Describe the preparation and use of cryoprecipitate and fresh frozen plasma.
39.05	Describe the principle and use of the antiglobulin test, both direct and indirect methods, including the purpose for using IgG sensitized cells.
39.06	Perform methods of adsorption and elution techniques.
39.07	Perform procedures for identification of multiple antibodies in recipient specimen including enzyme enhancement, dosage, temperature and complement binding.
39.08	Determine appropriate dosage of Rh Immune Globulin based on test results.
39.09	Interpret the preliminary investigation results to determine whether a transfusion reaction has occurred.
40.0	Demonstrate and understanding of advanced principles of molecular diagnostics. – The student will be able to:
40.01	Describe the steps used to prepare genomic DNA from blood and buccal cells.
40.02	Describe the process of Fluorescent In-Situ Hybridization (FISH).
40.03	Compare and contrast real time PCR and conventional PCR.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

**Clinical learning experiences in a clinical laboratory and related areas are an integral part of this program. Clinical learning experiences should reflect the full breadth of responsibilities expected of a Medical Laboratory Technician and should include appropriate experience in each of the areas of the laboratory described herein. The specified length for each of the courses listed is inclusive of clinical experience for each of the respective laboratory sections.**

### Special Notes

The following ATD programs have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Medical Clinical Laboratory Technician –ATD (0351100404/0351100401) - 40 credits

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Registered Phlebotomy Technician (RPT) (AMEDT005) - 3 credits

This program meets the Department of Health HIV/AIDS Domestic Violence and Prevention of Medical Errors education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Histologic Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351100800
Program Type	College Credit
Standard Length	76 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2011 Medical and Clinical Laboratory Technologists

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as tissue technologists SOC Code 29-2011 (Medical and Clinical Laboratory Technologists) or histotechnicians or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to preparation of tissue specimens of human and animal origin for research, teaching purposes, or diagnosis of body dysfunction and malignancy. A clinical component is a necessary element of this program.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 76 credit hours.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Identify the anatomic structure and function of body systems in relation to disease states and services performed by the histotechnician.
- 13.0 Practice quality assurance, safety, and acceptable communication skills.
- 14.0 Adhere to legal and ethical principles related to the practice of histotechnology.
- 15.0 Demonstrate knowledge of histology laboratory operations related to accessioning.
- 16.0 Demonstrate knowledge of histology laboratory operations related to grossing.
- 17.0 Demonstrate knowledge of histology laboratory operations related to tissue processing.
- 18.0 Demonstrate knowledge of histology laboratory operations related to embedding.
- 19.0 Demonstrate knowledge of histology laboratory operations related to microtomy.
- 20.0 Perform tissue preparation techniques.
- 21.0 Maintain histology laboratory equipment.

Florida Department of Education  
Student Performance Standards

**Program Title:** Histologic Technology  
**CIP Number:** 1351100800  
**Program Length:** 76 credit hours  
**SOC Code(s):** 29-2011

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:</b>	
12.0	Identify the anatomic structure and function of body systems in relation to disease states and services performed by the histotechnician. – The student will be able to:
12.01	Demonstrate knowledge of human anatomy and physiology as related to histotechnology.
12.02	Demonstrate knowledge of normal histology of human organs.
12.03	Demonstrate knowledge of various methods of obtaining histological specimens from patients.
12.04	Identify tissue structures and cellular components; relate both to physiological functions.
12.05	Demonstrate knowledge of types of histological specimens usually submitted for gross and microscopic examination or submitted for gross description only.
12.06	Demonstrate knowledge of the processing of histologic specimens especially as related to disease processes.
12.07	Demonstrate knowledge of tissue processing methods and schedules, depending on tissue type and size including variety of fixatives used and how each relates to different tissue components and the disease process to be diagnosed.
13.0	Practice quality assurance, safety and acceptable communication skills. – The student will be able to:
13.01	Practice quality control in the histology laboratory as required by the accrediting agency.
13.02	Follow institutional policies and procedures related to safety.
13.03	Demonstrate knowledge of medical terminology.

13.04	Recognize errors and their sources, and take corrective action.
13.05	Demonstrate knowledge of chemical hazards and acceptable exposure limits within the histopathology laboratory.
13.06	Demonstrate knowledge of proper disposal methods for all chemical and biological waste within the histopathology laboratory with emphasis on both state and local requirements.
13.07	Implement procedures to meet regulatory and accreditation agency patient safety guidelines.
14.0	Adhere to legal and ethical principles related to the practice of histotechnology. – The student will be able to:
14.01	Practice discretion and confidentiality with protected health information in regard to laboratory reports, requisitions and computer monitors.
14.02	Demonstrate knowledge of the histotechnician's role and responsibilities in relation to the health care team.
14.03	Demonstrate knowledge of the legal ramifications of pathology practice of laboratory medicine.
15.0	Demonstrate knowledge of histology laboratory operations related to accessioning. – The student will be able to:
15.01	Demonstrate the understanding of evaluation of acceptable specimen protocol including proper patient identification.
15.02	Recognize specimens submitted for special studies (i.e. Immunofluorescence, Quantitative Iron).
15.03	Verify positive patient ID.
16.0	Demonstrate knowledge of histology laboratory operations related to grossing. – The student will be able to:
16.01	Demonstrate knowledge of fixation types and volume to size.
16.02	Demonstrate the need for accurate labeling of cassettes with accession number and sub-parts in relation to gross description.
16.03	Explain the purpose of macroscopic descriptions according to standard grossing protocol.
16.04	Recognize the measures of loss prevention of small specimens (i.e. sponges, lens paper, biopsy bags).
16.05	Identify the processes of the integrity of minute fragments including but not limited to cell blocks.
16.06	Demonstrate knowledge of decalcification procedures by specimen type.
16.07	Triage specimens for size for appropriate tissue processing schedules.
17.0	Demonstrate knowledge of histology laboratory operations related to tissue processing. – The student will be able to:
17.01	Demonstrate knowledge of the types of tissue processors including routine, microwave and rapid.
17.02	Perform the operation and maintenance of equipment.

17.03	Perform the preparation of a reagent.
17.04	Create tissue processing schedules by size and tissue type.
17.05	Perform tissue processor maintenance including changing and rotation of reagents.
17.06	Recognize the difference in paraffin types for histological processes including their composition, utility, and melting point.
18.0	Demonstrate knowledge of histology laboratory operations related to embedding. – The student will be able to:
18.01	Recognize adequacy of tissue processing and rectify if possible.
18.02	Recognize special instructions given from the gross team.
18.03	Verify the number of pieces and cassettes submitted.
18.04	Select the appropriate size of mold for the size of tissue being embedded.
18.05	Perform the proper orientation of tissue pieces (i.e. Punch biopsies, tubes, veins).
18.06	Apply knowledge of the prevent air bubbles and multi-layering of paraffin.
18.07	Apply quality control measures for the temperatures of paraffin including daily recording.
19.0	Demonstrate knowledge of histology laboratory operations related to microtomy. – The student will be able to:
19.01	Demonstrate the use of microtomy tools and microtomes including alignment and angles, and proper disposal of blades.
19.02	Select the appropriate thickness of sections for routine specimens and special procedures.
19.03	Identify the number of slides and levels per block as indicated.
19.04	Demonstrate techniques for facing/trimming into blocks for full section.
19.05	Perform slide selection for all specimen types including slides with adhesives for bones and nails.
20.0	Perform tissue preparation techniques. – The student will be able to:
20.01	Demonstrate an understanding of the need for proper histologic specimen identification.
20.02	Perform the clinically appropriate preparation and histochemical staining techniques when ordered by the pathologist.
20.03	Identify and troubleshoot problems encountered in histological staining and reagent preparation procedures.
20.04	Demonstrate the knowledge of the current methods of immunohistochemistry procedures for the detection of antigen.

20.05	Evaluate, validate and understand new preparation and staining procedures.
20.06	Distinguish between well-prepared and stained and poorly prepared and stained histologic specimens.
20.07	Identify tissue structures and their staining characteristics.
20.08	Demonstrate knowledge of frozen section use and techniques.
21.0	Maintain histology laboratory equipment. – The student will be able to:
21.01	Perform routine maintenance of equipment and instruments within specified limits to include:
21.01.01	embedding centers
21.01.02	tissue processors
21.01.03	microtomes
21.01.04	cryostat
21.02	Refer to appropriate person(s) for complex repairs.
21.03	Follow procedures for accessibility and maintenance of service records.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Opticianry  
**Career Cluster:** Health Science

**AS**

CIP Number	1351180100
Program Type	College Credit
Standard Length	72 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2081 Opticians, Dispensing

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as dispensing opticians, optician apprentices, (dispensing), opticians: dispensing and measuring SOC Code 29-2081 (Opticians, Dispensing) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to lens surfacing, finishing and mounting; dispensing of completed prescriptions; fitting contact lenses; frame repair, business management techniques and human relations.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 72 credit hours.

## **Regulated Programs**

The program must be approved by the:

Commission on Opticianry Accreditation  
P.O. Box 592  
Canton, NY 13617  
(703) 468-0566

Graduates of a recognized program with an A.S. Degree are eligible to take the Florida optician licensure examination administered by the Department of Business and Professional Regulation for the Board of Opticianry (Chapter 484 F.S. Rule Chapter 21, F.A.C.).



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Surface ophthalmic lenses.
- 13.0 Edge and finish lenses.
- 14.0 Insert and mount lenses.
- 15.0 Select and order frames and lenses.
- 16.0 Fit and dispense prescriptions.
- 17.0 Fit contact lenses.
- 18.0 Repair frames.
- 19.0 Demonstrate knowledge of office management.
- 20.0 Practice effective business management operation techniques.
- 21.0 Demonstrate knowledge of anatomy and physiology of the eye.
- 22.0 Demonstrate knowledge of the effects ophthalmic devices have in correcting the errors of human vision.
- 23.0 Practice technical and business computer functions.

Florida Department of Education  
Student Performance Standards

**Program Title:** Optician  
**CIP Number:** 1351180100  
**Program Length:** 72 credit hours  
**SOC Code(s):** 29-2081

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0	Surface ophthalmic lenses. – The student will be able to:
12.01	Demonstrate knowledge of layout single vision and multi-focal lenses.
12.02	Demonstrate knowledge of fabrication of single vision lenses and/or multi-focal lenses.
12.03	Demonstrate knowledge of selecting ophthalmic lenses and supplies.
12.04	Perform lens verification and inspection.
13.0	Edge and finish lenses. – The student will be able to:
13.01	Layout and block lenses.
13.02	Machine and hand edge lenses.
13.03	Perform lens verification and inspection.
13.04	Demonstrate knowledge of air temper glass lenses.
13.05	Demonstrate knowledge of chemical temper glass lenses.
13.06	Tint hard resin lenses.
13.07	Select appropriate lenses.

14.0	Insert and mount lenses. – The student will be able to:
14.01	Insert lenses into plastic frames.
14.02	Insert lenses into metal frames.
14.03	Mount lenses into rimless and semi-rimless mountings or other appropriate designs.
14.04	Perform final inspection of eye glasses.
14.05	Demonstrate knowledge of lens enhancements/treatments.
15.0	Select and order frames and lenses. – The student will be able to:
15.01	Analyze written prescriptions.
15.02	Duplicate prescriptions from existing lenses.
15.03	Evaluate patient's life-style needs.
15.04	Use selected instruments to assist in the calculation of fitting measurements, including position of wear (POW).
15.05	Calculate lens size and availability.
15.06	Discuss charges with patients.
15.07	Demonstrate knowledge of managed vision care procedures.
15.08	Order lenses and frames, including lens enhancements/treatments.
16.0	Fit and dispense prescriptions. – The students will be able to:
16.01	Verify finished prescriptions to specifications.
16.02	Align frames.
16.03	Adjust and fit optical devices to patients.
17.0	Fit contact lenses. – The student will be able to:
17.01	Analyze prescriptions.
17.02	Evaluate patient suitability.
17.03	Use selected instruments to conduct and assess fittings.

17.04	Identify types of contact lenses.
17.05	Perform patient training.
17.06	Outline potential complications.
17.07	Perform follow-up evaluations.
18.0	Repair frames. – The student will be able to:
18.01	Demonstrate the knowledge of restoring finish and replacement/repair trim on frames.
18.02	Replace/repair nose pieces on plastic or metal frames.
18.03	Demonstrate knowledge of soldering metal frames.
18.04	Replace/repair frame-front, temples, monofilament, and rimless.
18.05	Reshape damaged frames to lenses.
18.06	Modify frames for special needs.
19.0	Demonstrate knowledge of office management. – The student will be able to:
19.01	Demonstrate knowledge of legal and ethical standards of vision care professionals.
19.02	Maintain and file patient records.
19.03	Demonstrate basic knowledge of managed vision care.
19.04	Demonstrate knowledge of the collections and overdue accounts.
19.05	Practice office supply control.
20.0	Practice effective business management operation techniques. – The student will be able to:
20.01	Develop a small business plan of operation.
20.02	Develop an office policy/procedure manual.
20.03	Demonstrate knowledge of business finance and operating expenses.
20.04	Demonstrate the knowledge of setting up a pay scale and benefit program for employees and a bookkeeping system.
20.05	Demonstrate knowledge of tax forms, payroll records, insurance needs and inventory needs.

20.06	Demonstrate knowledge of employee hiring and orientation.
20.07	Demonstrate knowledge of processes to resolve customer complaints.
20.08	Demonstrate a working knowledge of basic compliance laws related to Opticianry.
21.0	Demonstrate knowledge of anatomy and physiology of the eye. – The student will be able to:
21.01	Demonstrate understanding of the interrelationships between body systems.
21.02	Diagram and explain the anatomy of the visual system.
21.03	Recognize and discuss physiological conditions of the eye.
22.0	Demonstrate knowledge of the effects ophthalmic devices have in correcting the errors of human vision. – The student will be able to:
22.01	Demonstrate knowledge of basic mathematical principles that are involved in ophthalmic and geometrical optics.
22.02	Describe the influence of prisms on the behavior of light.
22.03	Apply the principles of light acting on curved single refracting surface to the optics of ophthalmic lenses for parallel and nonparallel light.
22.04	Describe the relationship and optical properties of cylindrical lenses.
22.05	Demonstrate knowledge of the theory of lens surface power measuring devices.
22.06	Create and eliminate prismatic effect by decentration.
22.07	Demonstrate the influence of lens thickness and surface curvature.
23.0	Practice technical and business computer functions. – The student will be able to:
23.01	Demonstrate knowledge of technical computer functions.
23.02	Demonstrate knowledge of practice management software and business applications of computers.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The cooperative method of instruction is appropriate for this program. When the cooperative method is offered, the following is required for each student: a training plan signed by the student, instructor and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; a work station which reflects equipment, skills, and tasks which are relevant to the occupations which the student has chosen as a career goal. Students must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

## **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Ophthalmic Laboratory Technician (CCC - 0351100600) – 24 credit hours

Eye Care Technician (CCC - 0351180302) – 48 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

Program Title:      Optical Management  
Career Cluster:     Health Science

**THIS PROGRAM HAS BEEN DAGGERED FOR DELETION. THE LAST YEAR TO ENROLL NEW STUDENTS IS 2021/22. LAST YEAR TO REPORT ENROLLMENT IS 2023/24. THIS PROGRAM WILL BE DELETED FROM DOE INVENTORY AT THE END OF 2023/24.**

AS	
CIP Number	1351180202
Program Type	College Credit
Standard Length	60 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11-9111 Medical and Health Services Managers

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as an Optical Manager, SOC Code 11-9111 (Medical and Health Services Managers) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of management, personnel management, and general business procedures.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 60 credit hours.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Apply supervision skills.
- 13.0 Communicate effectively in supervision.
- 14.0 Manage human behavior.
- 15.0 Motivate one's self.
- 16.0 Motivate others.
- 17.0 Apply strategies for effective management.
- 18.0 Utilize creative thinking to achieve business objectives.
- 19.0 Apply basic decision making skills in supervision.
- 20.0 Demonstrate appropriate communication skills.
- 21.0 Demonstrate appropriate math skills.
- 22.0 Demonstrate an understanding of basic science as it relates to management.
- 23.0 Demonstrate an understanding of entrepreneurship.
- 24.0 Demonstrate knowledge of data processing activities.
- 25.0 Identify, classify and demonstrate management functions.
- 26.0 Apply basic quality control principles.
- 27.0 Demonstrate an understanding of technical or industrial competencies.

Florida Department of Education  
Student Performance Standards

**Program Title:** Optical Management  
**CIP Number:** 1351180202  
**Program Length:** 60 credit hours  
**SOC Code(s):** 11-9111

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

12.0 Apply supervision skills. – The student will be able to:

12.01 Specify the responsibilities of the supervisor.

12.02 Practice human relations skills.

12.03 Follow leadership principles and approaches.

12.04 Apply positive approaches to discipline.

12.05 Conceptualize organizational functions of management.

12.06 Develop organizational plans.

12.07 Follow and teach accepted accident prevention practices.

12.08 Apply elements of delegation.

12.09 Coordinate employee and organization interest.

12.10 Apply techniques of dealing with crisis.

12.11 Utilize strategies for dealing with interpersonal conflicts.

12.12 Analyze causes of resistance in employees.

12.13	Implement the agreement finding process.
12.14	Develop and implement job instructions.
12.15	Apply delegation procedures.
12.16	Apply principles of management to employee/ employer conflicts.
13.0	Communicate effectively in supervision. – The student will be able to:
13.01	Solve problems in communicating.
13.02	Exhibit appropriate habits in person to person communication.
13.03	Apply listening skills.
13.04	Discuss the need for accurate pharmacy documentation and recordkeeping.
13.05	Use communication feedback effectively.
13.06	Use persuasion skills in communicating.
13.07	Build credibility in management.
13.08	React to non-verbal communication.
13.09	Practice confrontation skills.
13.10	Write an effective memorandum.
13.11	Prepare a written technical report.
14.0	Manage human behavior. – The student will be able to:
14.01	Use behavior modification techniques.
14.02	Practice transactional analysis skills.
14.03	Establish goals and objectives.
14.04	Identify and resolve emotional disturbances of workers.
14.05	Use self-concept building skills.
14.06	Assess worker and supervisor roles and relationships.

14.07	Manage worker resistance to change.
14.08	Diagnose the dynamics involved in performance appraisal.
14.09	Use appropriate assertiveness skills.
15.0	Motivate one's self. – The student will be able to:
15.01	Build improved attitude and self-confidence.
15.02	Conceptualize cause and effect relationship.
15.03	Set personal goals.
15.04	Apply self-esteem building skills.
15.05	Diagnose life traps.
15.06	Apply self-discipline techniques.
15.07	Determine areas of personal talent.
16.0	Motivate others. – The student will be able to:
16.01	Discuss the self-fulfilling prophesy.
16.02	Discuss the process of motivation.
16.03	Apply the hierarchy of human needs to worker motivation.
16.04	Apply the hierarchy of human needs to worker motivation.
16.05	Effect job enrichment procedures.
16.06	Apply attitude enrichment procedures.
16.07	Discuss the concept of maintainers and motivators.
16.08	Develop role of trust and credibility in worker motivation.
16.09	Direct goal setting procedures with workers.
16.10	Implement participative style of supervision.
17.0	Apply strategies for effective management. – The student will be able to:

17.01	Display knowledge or prescription pricing systems used in pharmacy.
17.02	Maintain stock inventory.
17.03	Prepare electronic purchase orders.
17.04	Receive, store and distribute pharmaceutical supplies.
17.05	Define industry standards in purchasing pharmaceutical supplies.
18.0	Utilize creative thinking to achieve business objectives. – The student will be able to:
18.01	Explain the difference between a cubic centimeter and a milliliter.
18.02	Use common pharmaceutical weighing equipment.
18.03	Use common pharmaceutical volume measurement equipment.
18.04	Explain the technique of preparing a solution, a suspension, an elixir, and emulsion and an extract.
18.05	Convert measurements within the apothecary, avoirdupois, and metric systems.
18.06	Use the following arithmetic procedures: ratio and proportion; percentage.
19.0	Apply basic decision making skills in supervision. – The student will be able to:
19.01	Predict physical and chemical incompatibilities utilizing chemistry properties.
19.02	Describe electrolyte balances.
19.03	Relate the general classes, actions, routes, action, and side effects of drugs.
19.04	Identify a listing of usual adult doses of medications and respective contraindications.
20.0	Demonstrate appropriate communication skills. – The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.03	Identify special precautions pertaining to children.
20.04	Maintain controlled substance inventory.
20.05	Demonstrate the proper technique of preparing pharmaceutical preparations.

20.06	Demonstrate the ability to correctly fill and deliver medication cassettes.
20.07	Collect data from medication administration record and drug use and evaluation form.
20.08	Identify automated medication dispensing equipment and its proper use.
21.0	Demonstrate appropriate math skills. – The student will be able to:
21.01	Locate correct stock container.
21.02	Weigh measure, count required individual doses of medication.
21.03	Label with required information.
21.04	Operate unit dose pre-packet equipment.
21.05	Place individual dose in appropriate containers, repackage in predetermined quantities.
21.06	Record prepackage medication data correctly.
21.07	Define role of technician in quality assurance activities.
22.0	Demonstrate an understanding of basic science as it relates to management. – The student will be able to:
22.01	Compare medication order with label on vial and check expiration date of product.
22.02	Calculate drug dosage for parenteral use.
22.03	Identify common drug/drug incompatibilities.
22.04	Reconstitute parenteral medications.
22.05	Use aseptic techniques to withdraw medication from stock vial measure correct quantity as instructed, select and insert it into IV solution without error.
22.06	Use aseptic technique to withdraw medication from an ampule.
22.07	Prepare parenteral solutions.
22.08	Prepare Total Parenteral Nutrition solutions.
22.09	Prepare chemotherapeutic agents using proper safety techniques.
22.10	Demonstrate appropriate technique in the use of specialized equipment such as: laminar flow hoods, filters, pumps, and automated compounders.
22.11	Place label on IV solution container and keep records.

22.12	Perform quality control check.
22.13	Identify storage requirements of reconstituted IV solutions.
23.0	Demonstrate an understanding of entrepreneurship. – The student will be able to:
23.01	Identify basic concepts of the American economic system.
23.02	Identify basic types and sources of consumer credit.
24.0	Demonstrate knowledge of data processing activities. – The student will be able to:
24.01	Demonstrate the ability to determine the proper priority of work.
24.02	Prepare a day's schedule for the employer.
24.03	Choose appropriate action in situations requiring application of business ethics.
24.04	Choose appropriate action in situations requiring following a chain of command.
24.05	Choose appropriate action in situations requiring effective time management.
24.06	Demonstrate ability to manage a team.
25.0	Identify, classify, and demonstrate management functions. – The student will be able to:
25.01	Define management.
25.02	Identify management positions and styles.
25.03	Identify the major functions of management.
25.04	Classify activities as part of the planning function of management.
25.05	Classify activities as part of the organizing function of management.
25.06	Classify activities as part of the staffing function of management.
25.07	Classify activities as part of the directing function of management.
25.08	Classify activities as part of the controlling function of management.
25.09	Demonstrate the ability to perform planning, organizing, staffing, directing, and controlling functions of management.
25.10	Distinguish among management functions.

25.11	Select the most effective communication systems.
26.0	Apply basic quality control principles. – The student will be able to:
26.01	Describe basic quality control systems.
26.02	Implement and practice quality control.
27.0	Demonstrate an understanding of technical or industrial competencies. – The student will be able to:
27.01	Discuss and/or perform basic procedures which fall under this management position.
27.02	Possess basic competency understanding necessary to the role of management.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Cooperative training - OJT is appropriate for this program. When cooperative training is offered, the following is required for each student: a training plan, signed by the student, instructor and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupations which the student has chosen as a career goal. Students must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Ophthalmic Technician  
**Career Cluster:** Health Science

**AS**

CIP Number	1351180301
Program Type	College Credit
Standard Length	72 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2099 Health Technologists and Technicians, All Other

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as ophthalmic technicians, optical goods workers SOC Code 29-2099 (Health Technologists and Technicians, All Other) or provide supplemental training for persons previously or presently employed in this occupation.

The content includes but is not limited to (1) to perform specified ophthalmologic tests and procedures with skill, (2) understand and practice the art of ophthalmologic assisting, thereby providing the patient with medical care of the highest quality and accuracy, (3) to become members of the health care team who contribute to the physical and psychological comfort of the patient, (4) to provide a system of quality assurance for both equipment and treatment delivery, (5) and to understand the importance of maintaining membership in the professional organizations and keeping abreast of the changes in the field of ophthalmology.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 72 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Discuss the ophthalmic practice and personnel.
- 02.0 Discuss legal and ethical issues in the ophthalmic practice.
- 03.0 Describe the basic functions of the human body systems.
- 04.0 Discuss the anatomy and physiology of the human eye.
- 05.0 Describe the clinical findings of common ocular pathology.
- 06.0 Demonstrate knowledge of geometric and physiologic optics.
- 07.0 Demonstrate clinical knowledge of ocular and systemic medications.
- 08.0 Demonstrate the taking of an ocular and medical history.
- 09.0 Demonstrate basic ophthalmic clinical skills.
- 10.0 Demonstrate intermediate ophthalmic clinical skills.
- 11.0 Demonstrate knowledge of ophthalmic surgical procedures.
- 12.0 Discuss patient services provided or by the ophthalmic technician.
- 13.0 Demonstrate office safety and maintenance.
- 14.0 Demonstrate knowledge of patient vital signs and reactions.
- 15.0 Demonstrate advanced clinical skills.

Florida Department of Education  
Student Performance Standards

Program Title: Ophthalmic Technician  
 CIP Number: 1351180301  
 Program Length: 72 credit hours  
 SOC Code(s): 29-2099.05

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Discuss the ophthalmic practice and personnel. - The student will be able to:
01.01	List the professionals who work in the eye care industry.
01.02	Differentiate between licensure and certification of personnel.
01.03	Identify the general responsibilities of ophthalmic technical personnel, the ophthalmic scribe and the administrative staff.
01.04	Define the levels of training and certification of the ophthalmic medical professional.
01.05	Define the scope of practice of the ophthalmic technician.
02.0	Discuss legal and ethical issues in the ophthalmic practice. – The student will be able to:
02.01	Identify methods of protection of personal health information for the patient.
02.02	Summarize the Health Information Portability Accountability Act as it pertains to care of the patient in the ophthalmic clinic.
02.03	Discuss ethical and legal standards of medical care.
02.04	Identify the components of a malpractice case, and methods employed to prevent negligence in the clinical setting.
02.05	Discuss physician and technician malpractice insurance.
02.06	Describe the process of informed consent.
03.0	Describe the basic functions of the human body systems. – The student will be able to:
03.01	Discuss the components and functions of the respiratory and cardiovascular system.
03.02	Describe the anatomy and physiology of the endocrine and reproductive systems.
03.03	Identify the components of the integumentary and digestive systems.

03.04	Describe the structure and function of the musculoskeletal system.
03.05	Discuss the components and functions of the nervous system.
04.0	Discuss the anatomy and physiology of the human eye. – The student will be able to:
04.01	Identify the bones and soft tissues of the orbit.
04.02	List the components of the anterior and posterior segments of the eye.
04.03	Discuss the anatomy of the eyelids and lacrimal system.
04.04	Describe the anatomy and physiology of the cornea and lens.
04.05	List the primary functions of the fibrous, vascular and sensory tunics of the eye.
04.06	Discuss the origins and functions of the extraocular muscles.
04.07	Describe ocular development during embryologic and fetal stages of gestation.
04.08	Identify the cranial nerves associated with movement and sensation of the ocular structures.
04.09	Describe the visual and pupillary pathways.
04.10	Discuss the pupillary light reflex.
04.11	Describe the process of accommodation.
05.0	Describe the clinical findings of common ocular pathology. – The student will be able to:
05.01	Discuss the principles of pathology.
05.02	Discuss basic microbiology as it applies to the ocular structures.
05.03	Differentiate between signs and symptoms of the ophthalmic patient.
05.04	Differentiate between inflammation and infection.
05.05	Identify disorders of the orbit.
05.06	Identify benign and malignant lesions of the eyelids.
05.07	List eyelid disorders due to malposition.
05.08	Discuss disorders of the lacrimal system.

05.09	Identify disorders of the conjunctiva and sclera.
05.10	Describe abnormal findings of the cornea.
05.11	Discuss intraocular inflammation of the iris and ciliary body.
05.12	Describe cataractous changes in the crystalline lens.
05.13	Discuss the ocular and visual changes associated with glaucoma.
05.14	List the signs and symptoms related to macular disease.
05.15	Discuss the retinal vascular changes associated with diabetes and cardiovascular disease.
06.0	Demonstrate knowledge of geometric and physiologic optics. – The student will be able to:
06.01	Discuss the visible spectrum and theories of visible light.
06.02	Describe the processes of reflection, refraction and absorption of visible light.
06.03	Discuss the index of refraction of different media.
06.04	Describe the process of refraction through a prism and a lens.
06.05	Identify the principle focal point and refraction of light rays through a plus or minus spherical lens.
06.06	Calculate the focal length and dioptric power of a lens.
06.07	Identify the principle focal lines and Conoid of Sturm of a spherocylinder lens.
06.08	Discuss human refractive errors.
06.09	Differentiate between simple, compound and mixed forms of astigmatism.
06.10	Identify lenses used in the correction of refractive errors.
06.11	Transpose prescriptions between plus and minus cylinder format.
06.12	Calculate a spherical equivalent power of a spherocylinder lens.
07.0	Demonstrate clinical knowledge of ocular and systemic medications. – The student will be able to:
07.01	Describe methods of delivery of ophthalmic and systemic medications.
07.02	Use accepted terminology and abbreviations related to pharmacology.

07.03	List ophthalmic medications used in the general ophthalmic examination.
07.04	Classify ophthalmic topical medications by the bottle top colors.
07.05	List topical medications used in the treatment of glaucoma.
07.06	Instill ophthalmic drops and ointments using proper technique.
07.07	Identify potential allergic reactions and side effects of topical ophthalmic medications.
07.08	Describe the mechanism of action of anti-VEGF medications used in the treatment of macular degeneration and diabetic retinopathy.
07.09	Match common systemic disease processes with the medications used in the treatment of these diseases.
07.10	List potential allergic reactions and ocular side effects of systemic medications.
08.0	Demonstrate the taking of an ocular and medical history. – The student will be able to:
08.01	Communicate effectively in written and oral communication.
08.02	Document information in the written or electronic medical record using appropriate medical terminology and accepted abbreviations.
08.03	Preserve patient confidentiality using HIPAA guidelines.
08.04	Maintain applicable ethical and legal standards.
08.05	Elicit the patient's chief complaint and history of present illness.
08.06	Identify pertinent ocular and systemic history that could affect the patient's ocular health.
08.07	Record ocular and systemic medicines.
08.08	Obtain pertinent family history of ocular and systemic disease.
08.09	Elicit the social history as it pertains to the ocular examination.
08.10	Record patient allergies and allergic reactions to ocular and systemic medicines, environmental substances and seasonal allergens.
09.0	Demonstrate basic ophthalmic clinical skills. – The student will be able to:
09.01	Test and record the patient's level of visual acuity at distance and at near.
09.02	Test and record the visual acuity level using a pinhole.
09.03	Select non-traditional methods of visual acuity assessment for non-verbal, illiterate or non-English speaking patients.



09.04	Identify methods of testing visual acuity on physically disabled patients or patients with nystagmus.
09.05	Neutralize the patient's current spectacle correction by manual or automated lensometry.
09.06	Measure and record the corneal surface refractive power by manual or automated keratometry.
09.07	Assess the patient's color vision using Ishihara plates, Farnsworth D-15, or other color tests.
09.08	Test and record the central visual field using an Amsler grid.
09.09	Test and record the patient's visual field using confrontation testing.
09.10	Perform formal visual field assessment using automated perimetry.
09.11	Identify patient reliability errors and technician errors on the automated perimetry printout.
09.12	Determine the binocular status of the patient using fusion and stereopsis testing.
09.13	Assess the extraocular motility by version and duction testing.
09.14	Qualify strabismic deviations by position.
09.15	Differentiate between phoric and tropic deviations.
09.16	Identify and measure extraocular muscle imbalances using prism and alternate cover or Maddox rod and prism testing.
09.17	Estimate the ocular muscle deviation by corneal reflex positions using the Hirschberg or Krimsky methods.
09.18	Assess and record the direct and consensual pupillary reactions to light and accommodation.
09.19	Perform swinging flashlight test and identify afferent pupillary defects.
09.20	Examine the ocular adnexa and record the findings.
09.21	Instill topical anesthetic and dilating drops.
09.22	Perform and record intraocular pressure measurements using Goldman applanation, Tonopen, or other methods of tonometry.
10.0	Demonstrate intermediate ophthalmic clinical skills. – The student will be able to:
10.01	Perform retinoscopy to estimate the patient's refractive error.
10.02	Demonstrate refractometry techniques to obtain the best corrected visual acuity.
10.03	Perform manifest and cycloplegic refractometry.

10.04	Identify ground-in or induced prism using manual or automated lensometry.
10.05	Determine add power required for near or intermediate tasks.
10.06	Assess the anterior segment using the slit lamp biomicroscope.
10.07	Perform axial length measurements using ultrasound and optical instruments.
10.08	Calculate the intraocular lens power range in the pre-operative cataract evaluation.
10.09	Perform optical imaging of the retina and optic nerve.
10.10	Use digital or film cameras to obtain external, anterior segment or fundus images.
10.11	Assist in fluorescein and ICG angiography.
10.12	Identify phases of fluorescein angiography.
10.13	Measure the corneal thickness by pachymetry.
10.14	Map the corneal surfaces by corneal topography.
10.15	Match diagnostic procedures used in evaluation and diagnosis with specific ocular disorders.
10.16	Identify normal and abnormal findings in ophthalmic diagnostic testing printouts.
10.17	Perform basic soft and rigid contact lens fitting.
10.18	Identify pathology related to contact lens wear.
10.19	Describe methods of patient education related to the care, wearing schedule and insertion/removal of contact lenses.
11.0	Demonstrate knowledge of ophthalmic surgical procedures. – The student will be able to:
11.01	Identify minor surgery procedures performed in the ophthalmic clinical setting.
11.02	Describe surgical procedures commonly performed on the orbits, lacrimal system and eyelids.
11.03	List procedures performed for correction of strabismus.
11.04	Identify and describe refractive surgical procedures.
11.05	Differentiate between full thickness and lamellar corneal transplantation.
11.06	Discuss the methods of cataract extraction.

11.07	Classify intraocular lens implants used after cataract extraction.
11.08	Identify laser and surgical procedures performed as treatment for glaucoma.
11.09	Discuss methods of removing the vitreous.
11.10	Describe retinal and macular surgical procedures.
11.11	Apply proper sterile technique in the minor procedure or surgical suite.
11.12	Describe proper assisting techniques in minor procedure or surgical cases.
12.0	Discuss patient services provided or by the ophthalmic technician. – The student will be able to:
12.01	Demonstrate proper technique of placing a pressure or non-pressure eye patch.
12.02	Demonstrate patient education of ocular and systemic disease processes.
12.03	Inform the patient of required testing, the interpreted test results, and treatment options for ophthalmic disease processes.
12.04	Counsel the patients on proper use of medications.
12.05	Instill ocular medications using proper technique.
12.06	Discuss triage procedures for ocular emergencies.
12.07	Identify resources available for the patient with subnormal vision.
12.08	Instruct patient is the use of optical and non-optical low vision devices.
12.09	Instruct the patient on the insertion, removal and care of contact lenses.
13.0	Demonstrate office safety and maintenance. – The student will be able to:
13.01	Identify environmental and electrical safety procedures in the clinical practice.
13.02	Replace instrument bulbs and fuses employing proper technique and safety standards.
13.03	Discuss methods of instrument cleaning and maintenance.
13.04	Maintain clinical supply inventory.
13.05	Discuss proper disposal of hazardous and bio-medical waste.
13.06	Describe the principles of infection control and standard universal precautions.

13.07	Maintain aseptic technique in the clinical and surgical setting.
13.08	Identify potential safety hazards in the physical space.
14.0	Demonstrate knowledge of patient vital signs and reactions. – The student will be able to:
14.01	Perform cardiopulmonary resuscitation in a clinical setting.
14.02	Measure and record blood pressure.
14.03	Measure and record patient temperature.
14.04	Assess patient respiration.
14.05	Recognize patient allergic response in the clinical setting.
15.0	Demonstrate advanced clinical skills. – The student will be able to:
15.01	Assess visual ability in low vision patients.
15.02	Calculate magnification needed for optical aids used in low vision.
15.03	Identify optical low vision aids.
15.04	Identify paralytic extraocular muscle using the three-step test.
15.05	Assess and record head and posture abnormalities.
15.06	Perform fusional amplitudes.
15.07	Demonstrate use of direct ophthalmoscopy.
15.08	Perform advanced ocular imaging procedures.
15.09	Determine prism addition in spectacle correction.
15.10	Calculate induced prism using Prentice's formula.
15.11	Perform specialty contact lens fitting.
15.12	Perform ophthalmic electrophysiology testing.
15.13	Demonstrate clinical supervision skills.
15.14	Demonstrate clinical training techniques.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical education has been established for students in this program to permit accurate assessment of the knowledge, skills, and abilities of students in the clinical component of the program. After completion of the prerequisite practice of ophthalmic assisting procedures, students indicate to the faculty their readiness for evaluation of competence in a specific competency category/procedure.

Multiple affiliates are utilized for the clinical activities which provide equitable opportunities for the student to achieve the program clinical objectives. The resulting clinical rotations provide students with the technical skills for the ophthalmic medical technician.

### **Special Notes**

The program is designed to provide the medical community of ophthalmology with workers who, under the supervision of an ophthalmologist, aid in the treatment of eye conditions and diseases. The curriculum provides students an opportunity to develop technical and social skills through experiences in the clinic, classroom, and laboratory. The Health Careers Core must be taken by all students (secondary, postsecondary adult and postsecondary vocational) planning to complete any Health Occupations program. Once successfully completed, the core does not need to be repeated at any instructional level.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Health Navigator  
**Career Cluster:** Health Science

**AS**

CIP Number	1351220800
Program Type	College Credit
Standard Length	60 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	11.9111 Medical and Health Services Manager 21.1094 Community Health Worker

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to prepare students for employment as health navigators. SOC Codes: 11.9111 (Medical and Health Services Manager) or 21.1094 (Community Health Worker) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes but is not limited to communication skills, leadership skills, human relations and employability skills, principles of health insurance, introduction to computer literacy, health care organization, medical ethics, legal aspects, and advanced technical skills in a chosen health-related profession, health and safety.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 60 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate computer literacy with emphasis on current technology and the implications for and the effects on our society.
- 02.0 Demonstrate knowledge of practical methods of speech composition, organizational patterns and presentation.
- 03.0 Demonstrate basic knowledge of medical language, anatomy and physiology.
- 04.0 Demonstrate knowledge of the major ethical theories in philosophy and how they relate to clinical care.
- 05.0 Demonstrate knowledge of the use of scientific methods in examining society.
- 06.0 Meet requirements for CPR Certification.
- 07.0 Demonstrate knowledge of modern scientific psychology and its application to human behavior.
- 08.0 Demonstrate knowledge of the basic concepts of statistical design and data analysis.
- 09.0 Identify and apply basic knowledge of different aspects of wellness.
- 10.0 Demonstrate knowledge of various topics pertinent to the five core disciplines of public health.
- 11.0 Demonstrate the ability to identify U.S. health care delivery funding sources.
- 12.0 Demonstrate ability to work as a health navigator or community health worker.
- 13.0 Demonstrate knowledge of current events in the field of public health.
- 14.0 Demonstrate knowledge of health communication and its impact on health outcomes.
- 15.0 Define and describe: long-term care and types of residences.
- 16.0 Demonstrate the use of evidence to draw conclusions about disease etiology.
- 17.0 Demonstrate knowledge of the three primary levels of prevention.
- 18.0 Demonstrate knowledge of how the insured and uninsured interact with the United States healthcare system.

Florida Department of Education  
Student Performance Standards

Program Title: Health Navigator  
 CIP Number: 1351220800  
 Program Length: 60 credit hours  
 SOC Code(s): 11.9111, 21.1094

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Demonstrate computer literacy with emphasis on current technology and the implications for and the effects on our society. – The student will be able to:
01.01	Define cyber space and online communications, including the impact of the Internet and World Wide Web; ethical, privacy, environmental, and health related issues.
01.02	Demonstrate an understanding of how the Internet and World Wide Web impact: ethics, privacy as well as environmental, and health related issues.
02.0	Demonstrate knowledge of practical methods of speech composition, organizational patterns and presentation. – The student will be able to:
02.01	Demonstrate ability to present information in a group setting.
02.02	Demonstrate an understanding of how to organize, aggregate and present information.
03.0	Demonstrate basic knowledge of medical language, anatomy and physiology. – The student will be able to:
03.01	Define, describe and discuss anatomic descriptive terms of the body.
03.02	Demonstrate an understanding of basic patient discharge and transfer procedures.
03.03	Describe common abbreviations and commonly used medical terms and their proper usage.
03.04	Define and describe anatomic names of bones and organs of the body.
04.0	Demonstrate knowledge of the major ethical theories in philosophy and how they relate to clinical care. – The student will be able to:
04.01	Define ethical theories in philosophy and how they are used in evaluating contemporary issues in health care.
04.02	Describe applications of ethical codes.
04.03	Explain variations in ethical standards across health care.
05.0	Demonstrate knowledge of the use of scientific methods in examining society. – The student will be able to:



05.01	Define and discuss group structure.
05.02	Define and discuss socialization, social stratification and social roles.
05.03	Explain deviance, collective behavior, ethnic diversity and globalism.
06.0	Meet requirements for CPR Certification. – The student will be able to:
06.01	Demonstrate knowledge and skills necessary in an emergency to help sustain life until professional medical help arrives.
06.02	Demonstrate knowledge and skills necessary in an emergency to reduce pain until professional medical help arrives.
06.03	Demonstrate knowledge and skills necessary in an emergency to minimize the consequences of injury until professional medical help arrives.
07.0	Demonstrate knowledge of modern scientific psychology and its application to human behavior. – The student will be able to:
07.01	Discuss personality development.
07.02	Define: perception, motivation, learning, thinking, and remembering.
07.03	Describe how the scientific method is used in psychology.
07.04	Explain emotion and how it impacts perception.
07.05	Define intelligence and describe how it is measured.
07.06	Define cognition and how information is input, stored and retrieved.
08.0	Demonstrate knowledge of the basic concepts of statistical design and data analysis. – The student will be able to:
08.01	Discuss descriptive and inferential statistics.
08.02	Define: data organization and analysis, probability, discrete and continuous probability distributions, confidence intervals, hypothesis testing, correlation and simple linear regression.
08.03	Describe when to use inferential, descriptive or probability statistics.
08.04	Define basic statistics: mean, median, mode and variance.
09.0	Identify and apply basic knowledge of different aspects of wellness. – The student will be able to:
09.01	Discuss integrating health living into one's lifestyle.
09.02	Define: physical fitness, mental health, nutrition, tobacco usage, alcohol consumption, illicit drug use, family living and how these factors connect with the concepts of wellness on a personal level.
09.03	Identify the risk factors for cardiovascular disease.

09.04	Describe the effects of tobacco and smoking on the human body.
09.05	Describe the various fitness methods to improve health.
09.06	Discuss the effects of nutrition on health and wellness.
09.07	Explain body composition and achieving a healthy weight.
09.08	Describe stress management strategies.
09.09	Discuss the use and abuse of illicit drugs in society.
09.10	Describe the effects of chronic disease on the human body.
10.0	Demonstrate knowledge of various topics pertinent to the five core disciplines of public health. – The student will be able to:
10.01	Define public health.
10.02	Describe core disciplines of public health: Community and Family Health, Environmental and Occupational Health, Health Policy and Management, Epidemiology/Biostatistics and Global Health.
10.03	Describe why public health is important.
10.04	Summarize the historical milestones in public health.
10.05	Identify and describe the five core disciplines of public health.
10.06	Identify elements of public health in our everyday world.
10.07	Explain the concepts of: prevention, detection, control of infectious and chronic conditions, health disparities, and global health.
10.08	Compare and contrast examples of major domestic and international public health issues.
11.0	Demonstrate the ability to identify U.S. health care delivery funding sources. – The student will be able to:
11.01	Demonstrate an understanding of the evolutionary perspective of health services and its relevance with the existing healthcare system, facilities and services.
11.02	Explain the social, political, and public policy implications of health-related issues, such as availability, cost, delivery, and financing.
11.03	Describe the various health care organizations and service delivery options.
11.04	Identify the major health professions and explain the role of each and their licensing/educational requirements.
11.05	Compare and contrast the health care delivery systems of the U.S. with other major industrialized nations.
11.06	Understand the array of career choices in the health care sector of the economy.

11.07	Discuss the various sources and uses of funds for healthcare as well as market trends and future implications.
12.0	Demonstrate ability to work as a health navigator or community health worker. – The student will be able to:
12.01	Identify community agencies where health navigators are employed.
12.02	Complete a field experience that provides student with descriptions of primary duties, annual salary and interaction with professional organization.
12.03	Demonstrate an understanding of the essential duties of health navigators.
12.04	Describe barriers to care faced by patients and consumers of placement site.
12.05	Discuss the core health activities of placement site.
12.06	Demonstrate an understanding of how placement site works with: local, county, state and federal agencies.
12.07	Evaluate the role of health navigation in patient health care.
12.08	Demonstrate communication techniques to assess patient health and needs.
13.0	Demonstrate knowledge of current events in the field of public health. – The student will be able to:
13.01	Identify outlets (news, media, governmental) used to communicate public health events to the general public.
13.02	Describe the implications of current events on public health.
13.03	Discuss concerns related to how public health information is relayed to the public.
13.04	Recognize how reporting of global events (e.g. epidemics, regime change, and weather events) has the potential to impact other areas.
13.05	Locate emerging public health trends.
13.06	Explain etiology of emerging public health trends discussed throughout semester.
13.07	Discuss legislation designed to protect the public's right to information during major health events (epidemics, terrorism, natural disasters).
14.0	Demonstrate knowledge of health communication and its impact on health outcomes. – The student will be able to:
14.01	Describe key concepts and skills used to identify individuals with reduced health literacy.
14.02	Explain how understanding health literacy is as a determinant of health.
14.03	Discuss how to best provide culturally-appropriate communication and care starting with an awareness of one's own culture and the skills needed to provide sensitive and meaningful care and services to others.
14.04	Discuss basic constructs of theories used in behavior change and persuasion.

14.05	Classify health communication programs based on disease type (e.g. chronic vs. infectious).
14.06	Determine communication methods to be used in specific settings (healthcare, school, and workplace).
14.07	Discuss risks and rewards associated with use of digital communication in health care.
15.0	Define and describe: long-term care and types of residences. – The student will be able to:
15.01	Explain psychological factors associated with the graying of populations in developed areas.
15.02	Describe demographic characteristics of aging population.
15.03	Describe the phenomenon of increasing life expectancy.
15.04	Discuss health promotion and prevention for aging populations.
15.05	Compare and contrast aging populations across the 20 and 21 <sup>st</sup> centuries.
15.06	Summarize the geriatric medicine movement.
16.0	Demonstrate the use of evidence to draw conclusions about disease etiology. - The student will be able to:
16.01	Define evidenced based thinking in public health.
16.02	Identify evidence based recommendations to determine disease etiology, benefits and basic recommendations for prevention.
16.03	Discuss health information concepts related to economic, legal and social issues.
16.04	Investigate a problem by using evidenced based thinking skills to define a health problem and determine what information is needed to make a decision.
16.05	Locate and evaluate online health information to determine appropriate audiences are reached using specific content to the demographic group.
17.0	Demonstrate knowledge of the three primary levels of prevention. – The student will be able to:
17.01	Discuss implementation methods of prevention used in public health: education, motivation and obligation.
17.02	Describe the three levels of prevention in public health: primary, secondary, and tertiary.
17.03	Explain how preventative methods can be used throughout the life-cycle.
17.04	Identify individual and community prevention needs in order to connect available resources to distressed areas.
17.05	Summarize specific primary prevention methods including: vaccinations, exercise, nutrition counseling, and birth control.
17.06	Summarize secondary prevention methods including: screening for risk factors of cardiovascular disease and injury prevention.

17.07	Summarize specific tertiary prevention methods including: treatment to control symptoms and prevent complications.
18.0	Demonstrate knowledge of how the insured and uninsured interact with the United States healthcare system. – The student will be able to:
18.01	Identify types of health insurance, e.g., Medicaid, Medicare and Medigap, exchanges, employment-based.
18.02	Accurately describe the history of the development of the U.S. Healthcare system.
18.03	Explain the relationship between essential services such as: preventive care, emergency care, choice of providers, institutional options, prescription drug options and coverage decisions.
18.04	Describe issues associated with having access to care in the absence of health insurance and consequences of the decision not to obtain health insurance.
18.05	Explain goals, limitations and basic rules for eligibility for worker's compensation.
18.06	Discuss market and social justice philosophies in relation to health care coverage internationally.
18.07	Describe the advantages and disadvantages of the U.S. health care coverage system.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### **Certificate Programs**

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates:

Health Navigator Specialist (0351221100) - 31 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

Florida Department of Education  
Curriculum Framework

**Program Title:** Orthotics & Prosthetics Technology  
**Career Cluster:** Health Science

**AS**

CIP Number	1351230703
Program Type	College Credit
Standard Length	60 credit hours
CTSO	HOSA
SOC Codes	51-9082- Medical Appliance technicians

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as Orthotic and Prosthetic Technicians (SOC Code 51-9082.00: Medical Appliance Technicians).

The content includes, but is not limited to, human anatomy and physiology, biomechanics and kinesiology, material science, orthotic and prosthetic fabrication, safety procedures, CAD/CAM, and clinical pathologies.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 60 credit hours.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Discuss and understand the role and responsibilities of an orthotic and prosthetic technician.
- 02.0 Discuss and describe an overview of the human body, including organization and chemical process.
- 03.0 Demonstrate knowledge and use medical terminology integral to Orthotics and Prosthetic technology.
- 04.0 Demonstrate knowledge of foot orthoses.
- 05.0 Demonstrate knowledge of UCBL foot orthoses.
- 06.0 Demonstrate knowledge of Ankle Foot Orthoses (AFO).
- 07.0 Demonstrate knowledge of Knee-Ankle-Foot Orthoses (KAFO).
- 08.0 Demonstrate knowledge of Hip-Knee-Ankle-Foot Orthoses(HKAFO), Standing Frames/Parapodiums.
- 09.0 Demonstrate knowledge of Knee Orthoses (KO) and Hip Orthoses.
- 10.0 Demonstrate the knowledge of Hand Orthoses and Wrist-Hand Orthoses.
- 11.0 Demonstrate knowledge of Elbow Orthoses Shoulder-Elbow-Wrist-Hand (SEWH) and Fracture Orthoses.
- 12.0 Demonstrate knowledge of Lumbo-Sacral Orthoses (LSO), Thoraco-Lumbo-Sacral Orthoses (TLSO) and Cervico-Thoraco-Lumbo-Sacral Orthoses (CTLSO).
- 13.0 Demonstrate knowledge of Partial Foot Prostheses.
- 14.0 Demonstrate knowledge of Syme Prostheses.
- 15.0 Demonstrate knowledge of Transtibial Prostheses.
- 16.0 Demonstrate knowledge of Transfemoral Prostheses.
- 17.0 Demonstrate knowledge of Knee Disarticulation and Hip Disarticulation / Hemipelvectomy Prostheses.
- 18.0 Demonstrate knowledge of Transradial Prostheses.
- 19.0 Demonstrate knowledge of Transhumeral Prostheses.



Florida Department of Education  
Student Performance Standards

Program Title: Orthotics & Prosthetics Technology  
 CIP Number: 1351230703  
 Program Length: 60 credit hours  
 SOC Code(s): 51-9082.00

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

01.0	Discuss and understand the role and responsibilities of an Orthotic and Prosthetic Technician. - The student will be able to:
01.01	Explain the role of the orthotic and prosthetic technician in providing ethical patient-centered care in technical support of patients.
01.02	Demonstrate knowledge of professional responsibilities of the orthotic and prosthetic technician to the orthotic and prosthetic workflow as well as to promotion of the field.
01.03	Demonstrate understanding of the governing statutes and ethical considerations of the role of the technician, support personnel, and those holding certificates and/or licensure in any orthotic and prosthetic profession.
01.04	Demonstrate understanding of safety procedures throughout fabrication, delivers, and maintenance of all orthotic and/or prosthetic services.
01.05	Demonstrate knowledge of safety organizations and governing bodies including, but not limited to, OSHA, The Joint Commission, and HIPPA.
01.06	Discuss the importance of professional development including continuing education, promotion of public awareness of the orthotic and prosthetic profession and involvement in professional organizations.
02.0	Discuss and describe an overview of the human body, including organization and chemical process. - The student will be able to:
02.01	Demonstrate an understanding of the interrelationships of the structure of the human body and the specific functions of its cells, tissues, organs and organ systems.
02.02	Demonstrate knowledge of the basic principles of chemistry that govern the normal maintenance of homeostasis.
02.03	Demonstrate understanding of the malfunction of homeostatic mechanisms in response to stress and/or disorders in the human body.
03.0	Demonstrate knowledge and use medical terminology integral to Orthotics and Prosthetic Technology. - The student will be able to:
03.01	Define the meaning of prefixes, suffixes, word roots and combining forms used in analyzing and defining medical terms.
03.02	Correctly spell and/or pronounce medical terms and abbreviations essential to the practice of Orthotics and Prosthetics.
04.0	Demonstrate knowledge of foot orthoses. - The student will be able to:

04.01	Demonstrate knowledge of current materials used in the fabrication of hard and soft foot orthoses.
04.02	Understand the difference between corrective and accommodative foot orthoses.
04.03	Demonstrate knowledge and skill to prepare positive models for foot orthoses (category I and II modifications only*).
04.04	Demonstrate skill to form materials to fabricate hard and soft orthoses.
04.05	Demonstrate knowledge and skill of modifications of foot orthoses.
04.06	Demonstrate knowledge and skill to correctly fit foot orthoses into shoes including corrections for heel height.
04.07	Demonstrate knowledge of shoe modification.
04.08	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological foot.
05.0	Demonstrate knowledge of UCBL foot orthoses. - The student will be able to:
05.01	Demonstrate knowledge of the bony landmarks and pressure tolerant areas of the foot.
05.02	Demonstrate knowledge to locate the medial, lateral, and transverse arches of the foot.
05.03	Demonstrate knowledge and skill to prepare a positive UCBL model for fabrication (category I and II modifications only*).
05.04	Demonstrate knowledge of materials used to fabricate UCBL orthoses.
05.05	Demonstrate knowledge and skill in the processes used to fabricate UCBL orthoses including medial posting and trim lines.
06.0	Demonstrate knowledge of Ankle Foot Orthoses (AFO). - The student will be able to:
06.01	Demonstrate knowledge of the following AFO designs:
06.01.01	Posterior leaf spring/flexible ankle
06.01.02	Thermoplastic solid ankle
06.01.03	Axial resisting
06.01.04	CROW/neuropathic walker
06.01.05	Metal
06.01.06	Dorsiflexion assist articulated
06.01.07	Dorsiflexion stop articulated
06.01.08	Plantarflexion resist articulated
06.01.09	Plantarflexion stop articulated
06.01.10	Limited motion articulated
06.01.11	Hybrid
06.01.12	Padded anterior shell
06.01.13	Molded inner boot

06.02	Demonstrate the skills to fabricate:
06.02.01	A thermoplastic AFO
06.02.02	A metal AFO with attached shoe
06.02.03	An articulated plastic AFO with self-aligning joints (Tamarack)
06.02.04	An articulated plastic AFO without self-aligning joints (Oklahoma)
06.02.05	Heel posts
06.02.06	Various strapping configurations
06.02.07	A plastic AFO with modification for varus and/or valgus ankle control
06.03	Demonstrate knowledge of components for various AFOs.
06.04	Demonstrate the knowledge and skills to correct a paper tracing to accommodate fixed or flexible deformities of the ankle.
06.05	Demonstrate knowledge and skill in making angular changes to a negative model in the sagittal plane, only under a practitioner's instruction (i.e. set ankle at 3 degrees of dorsiflexion).
06.06	Demonstrate knowledge and skill to prepare positive models for fabrication of AFOs (category I and II modifications only*).
06.07	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological foot and ankle.
07.0	Demonstrate knowledge of Knee-Ankle-Foot Orthoses (KAFO). - The student will be able to:
07.01	Demonstrate knowledge of the following KAFO designs:
07.01.01	Metal
07.01.02	Plastic
07.01.03	Hybrid
07.01.04	Stance Control
07.01.05	Axial resisting
07.01.06	Fracture
07.02	Demonstrate the skills to fabricate:
07.02.01	A metal KAFO
07.02.02	A plastic/metal (hybrid) KAFO
07.03	Demonstrate knowledge of components for coronal, sagittal and transverse plane control.
07.04	Demonstrate the knowledge and skills to correct a lower limb tracing for a KAFO.
07.05	Demonstrate knowledge and skill in making angular changes to a negative model in the sagittal plane, only under a practitioner's instruction (i.e. set knee in 3 degrees of flexion).
07.06	Demonstrate skill to prepare a lower limb positive model for fabrication of a KAFO (category I and II modifications only*).
07.07	Demonstrate skill to incorporate tibial torsion into a metal KAFO.
07.08	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological knee.

08.0	Demonstrate knowledge of Hip-Knee-Ankle-Foot Orthoses (HKAFO), Standing Frames/Parapodiums. - The student will be able to:
08.01	Demonstrate knowledge of the following HKAFO and standing frame designs:
08.01.01	Standing frames and parapodiums
08.01.02	Reciprocating gait orthoses
08.01.03	Metal HKAFO designs
08.01.04	Plastic HKAFO designs
08.02	Demonstrate knowledge of components for various HKAFO designs.
08.03	Demonstrate knowledge of hip joint placement.
08.04	Demonstrate knowledge of tracing correction principles for fabrication of HKAFOs.
08.05	Demonstrate knowledge of spinal control devices that may be incorporated in HKAFO designs.
08.06	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological hip.
09.0	Demonstrate knowledge of Knee Orthoses (KO) and Hip Orthoses. - The student will be able to:
09.01	Demonstrate knowledge of custom and prefabricated KO designs and principles.
09.02	Demonstrate knowledge pediatric hip control orthoses.
09.03	Demonstrate knowledge of post-surgical/trauma hip control orthoses.
10.0	Demonstrate the knowledge of Hand Orthoses and Wrist-Hand Orthoses. - The student will be able to:
10.01	Demonstrate knowledge and skill to fabricate plastic and/or metal hand orthosis and wrist- hand orthoses.
10.02	Demonstrate knowledge and skill to prepare positive models (category I and II modifications only*).
10.03	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological hand and wrist.
11.0	Demonstrate knowledge of Elbow Orthoses Shoulder-Elbow-Wrist-Hand (SEWH) and Fracture Orthoses. - The student will be able to:
11.01	Demonstrate knowledge of Elbow orthoses.
11.02	Demonstrate knowledge of SEWH orthoses.
11.03	Demonstrate knowledge of various upper extremity orthoses for fracture management.
11.04	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological elbow.
12.0	Demonstrate knowledge of Lumbo-Sacral Orthoses (LSO), Thoraco-Lumbo-Sacral Orthoses(TLSO) and Cervico-Thoraco-Lumbo-Sacral Orthoses (CTLSO). - The student will be able to:

12.01	Demonstrate knowledge of metal and plastic LSO and TLSO designs.
12.02	Demonstrate skills to fabricate metal LSO or TLSO spinal orthoses designs.
12.03	Demonstrate skills to fabricate plastic bi-valve TLSO or LSO spinal orthoses designs.
12.04	Demonstrate skills to fabricate scoliosis TLSO designs.
12.05	Demonstrate knowledge and skill to prepare positive models for spinal orthoses (category I and II modifications only*).
12.06	Demonstrate knowledge of metal and plastic CTLSO designs and principles.
12.07	Demonstrate knowledge of anatomy and biomechanics of the normal and pathological spine.
13.0	Demonstrate knowledge of Partial Foot Prostheses. - The student will be able to:
13.01	Demonstrate knowledge of designs and principles for partial foot prostheses.
13.02	Demonstrate knowledge of current materials used in the fabrication of partial foot prostheses.
13.03	Demonstrate skill to form materials to fabricate partial foot prostheses.
13.04	Demonstrate knowledge and skill to prepare positive models for partial foot prostheses (category I modifications only*).
14.0	Demonstrate knowledge of Syme Prostheses. - The student will be able to:
14.01	Demonstrate knowledge of designs for Syme prostheses.
14.02	Demonstrate the skills to fabricate expandable wall and/or medial opening prostheses.
14.03	Demonstrate knowledge and skill to prepare positive models for Syme prostheses (category I modifications only*).
14.04	Demonstrate knowledge of alignment for Syme prostheses.
15.0	Demonstrate knowledge of Transtibial Prostheses. - The student will be able to:
15.01	Demonstrate knowledge of patellar tendon-bearing transtibial socket designs with cuff suspensions systems.
15.02	Demonstrate knowledge of total surface bearing transtibial socket designs.
15.03	Demonstrate knowledge of hydrostatic transtibial socket designs using a locking mechanism.
15.04	Demonstrate knowledge of roll-on suction suspension systems.
15.05	Demonstrate knowledge of waist belt suspension systems.

15.06	Demonstrate knowledge of supracondylar suspension systems.
15.07	Demonstrate knowledge of knee joint and thigh lacer suspension systems.
15.08	Demonstrate knowledge of transtibial suspension sleeves.
15.09	Demonstrate knowledge of elevated vacuum transtibial socket designs and suspension systems.
15.10	Demonstrate the skills to fabricate an Exoskeletal transtibial prosthesis.
15.11	Demonstrate the skills to fabricate an Endoskeletal transtibial prosthesis.
15.12	Demonstrate the skills to fabricate a Soft interface for a transtibial prosthesis.
15.13	Demonstrate the skills to fabricate a transtibial diagnostic socket.
15.14	Demonstrate knowledge of components for various transtibial prostheses.
15.15	Demonstrate knowledge and skill to prepare positive models for transtibial prostheses (category I modifications only*).
15.16	Demonstrate the skills of transtibial alignment and transfer.
15.17	Demonstrate techniques for cosmetic finishing of a transtibial prostheses.
16.0	Demonstrate knowledge of Transfemoral Prostheses. - The student will be able to:
16.01	Demonstrate knowledge of Ischial containment transfemoral socket designs and suspensions systems:
16.02	Demonstrate knowledge of quadrilateral transfemoral socket designs.
16.03	Demonstrate knowledge of roll-on suction transfemoral suspension systems with or without locking mechanisms.
16.04	Demonstrate knowledge of hip joint, pelvic band, and waist belt transfemoral suspension systems.
16.05	Demonstrate knowledge of suction socket transfemoral socket designs and suspension systems.
16.06	Demonstrate knowledge of auxiliary suspension systems (TES belt, Silesian bandage).
16.07	Demonstrate knowledge of transfemoral suspension sleeves.
16.08	Demonstrate knowledge of elevate vacuum transfemoral socket designs and suspension systems.
16.09	Demonstrate the skills to fabricate transfemoral diagnostic sockets.
16.10	Demonstrate the skills to fabricate endoskeleton transfemoral prosthesis.

16.11	Demonstrate knowledge of components for various transfemoral prostheses.
16.12	Demonstrate knowledge and skills to prepare positive models for transfemoral prostheses (category I modifications only*).
16.13	Demonstrate the skills of transfemoral alignment and transfer.
16.14	Demonstrate techniques for cosmetic finishing of transfemoral prostheses.
17.0	Demonstrate knowledge of Knee Disarticulation and Hip Disarticulation / Hemipelvectomy Prostheses. - The student will be able to:
17.01	Demonstrate knowledge of knee disarticulation prosthetic designs and principles.
17.02	Demonstrate knowledge of hip disarticulation and hemipelvectomy prosthetic designs and principles.
18.0	Demonstrate knowledge of Transradial Prostheses. - The student will be able to:
18.01	Demonstrate knowledge of partial hand prosthesis designs and principles.
18.02	Demonstrate knowledge of passive/cosmetic prosthesis designs and principles.
18.03	Demonstrate knowledge of flexible and rigid hinges for transradial prostheses.
18.04	Demonstrate knowledge of transradial suspension techniques.
18.05	Demonstrate knowledge of body powered transradial prosthesis designs and principles.
18.06	Demonstrate knowledge of external powered transradial prosthesis designs and principles.
18.07	Demonstrate the skills to fabricate short transradial prosthesis.
18.08	Demonstrate the skills to fabricate long transradial prosthesis.
18.09	Demonstrate the skills to fabricate transradial prostheses with rigid and flexible hinges.
18.10	Demonstrate the skills to fabricate transradial prosthesis control harness and cable systems.
18.11	Demonstrate knowledge of components for various transradial prostheses.
18.12	Demonstrate knowledge and skill to prepare positive models for transradial prostheses (category I modifications only*).
18.13	Demonstrate the skill of transradial alignment.
18.14	Demonstrate techniques for cosmetic finishing of transradial prostheses.
19.0	Demonstrate knowledge of Transhumeral Prostheses. - The student will be able to:

19.01	Demonstrate knowledge of the elbow disarticulation prosthesis designs and principles.
19.02	Demonstrate knowledge of shoulder disarticulation prosthesis designs and principles.
19.03	Demonstrate knowledge of interscapular-thoracic prosthesis designs and principles.
19.04	Demonstrate knowledge of transhumeral prosthesis designs and principles.
19.05	Demonstrate knowledge of passive/cosmetic transhumeral designs and principles.
19.06	Demonstrate knowledge of body powered transhumeral designs and principles.
19.07	Demonstrate knowledge of external powered transhumeral designs and principles.
19.08	Demonstrate knowledge of transhumeral suspension techniques.
19.09	Demonstrate the skills to fabricate transhumeral prostheses.
19.10	Demonstrate the skills to fabricate a transhumeral control harness and cable system.
19.11	Demonstrate knowledge of components for various transhumeral prostheses.
19.12	Demonstrate knowledge and skill to prepare positive models for transhumeral prostheses (category I modifications only*).
19.13	Demonstrate the skill of transhumeral alignment.
19.14	Demonstrate techniques for cosmetic finishing of transhumeral prostheses.



## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

*\*Definition/hierarchy of modifications:*

- *Category I - Artifact modifications*
  - *Removal of surface deformations caused by poor casting technique*
  - *Filling of voids produced by air in the plaster mixture, cast sock/nylon separation*
  - *Extraneous surface irregularities resulting from cast seams, leaks, etc.*
  - *Any other surface modifications and smoothing procedures that do not substantially alter the surface topography or biomechanical attributes of the model*
- *Category II - Accommodative modifications*
  - *Standardized buildups/reliefs over well-identified common areas of concern such as malleoli, bony prominences on foot, knee joint regional prominences, etc.*
- *Category III - Biomechanical modifications*
  - *Modifications to negative/positive model resulting in significant changes to the volumetric/weight-distribution characteristics of the ensuing socket*
  - *Any changes to the negative/positive model that would alter the pre-existing biomechanical properties of the model*

Students who complete an Orthotic & Prosthetic Technician Programs accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) are eligible to sit for the Certified O & P Technician examination through the American Board for Certification in Orthotics, Prosthetics & Pedorthics (ABCOP).

### **Career and Technical Student Organization (CTSO)**

HOSA- Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Florida Department of Education  
Curriculum Framework

**Program Title:** Nursing R.N.  
**Career Cluster:** Health Science

**AS**

CIP Number	1351380100
Program Type	College Credit
Standard Length	72 Credits Hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-1141 Registered Nurses

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as registered nurses SOC Code 29.1141 (Registered Nurses). The Health Careers Core must be taken by all students (secondary and postsecondary adult) planning to complete any Health Occupations program. Once successfully completed, the core does not need to be repeated at any instructional level.

The content includes but is not limited to , theoretical instruction and clinical experience in medical, surgical, obstetric, pediatric, and geriatric nursing; theoretical instruction and clinical experience in acute, care, long term care and community settings; theoretical instruction and clinical application of vocational role and function; personal, family and community health concepts; nutrition; human growth and development over the life span; body structure and function; interpersonal relationship skills, mental health concepts; pharmacology and administration of medications; legal aspects of practice; and current issues in nursing.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 72 credit hours.

## **Regulated Programs**

### **This program is regulated by the Florida Board of Nursing.**

Clinical instruction of nursing students will meet the requirements of Florida Statute 464.019. Clinical experience must make up at least 50% of the total program. Clinical Simulation may be used for no more than 50% of the total clinical experience. Please refer to Florida Statute 464.019 (1) (b) for faculty credential requirements to teach this program.

The program must be approved by the Florida Board of Nursing. It is important that each associate degree nursing program effectively utilize the services of an active program advisory committee composed of individuals' representative of the community. Only when the educators and employers work together can the associate degree nursing graduate be provided the competencies that are most needed for successful employment as a new registered nurse.

The Human Patient Simulator (HPS) may be used for a limited number of clinical hours with prior approval from the Florida Board of Nursing.

Associate degree nurses (ADN) are prepared to provide nursing care to clients in a variety of settings. ADN graduates are eligible to take the National Council Licensing Examination (NCLEX-RN) which tests minimum competence to practice safe nursing care.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate competencies in the core components of professional nursing-professional behavior.
- 13.0 Demonstrate competencies in the core components of professional nursing-communication.
- 14.0 Demonstrate competencies in the core components of professional nursing-assessment.
- 15.0 Demonstrate competencies in the core components of the professional nurse-clinical decision-making.
- 16.0 Demonstrate competencies in the core components of professional nursing-caring intervention.
- 17.0 Demonstrate competencies in the core components of professional nursing- teaching and learning.
- 18.0 Demonstrate competencies in the core components of professional nursing-collaboration.
- 19.0 Demonstrate competencies in the core components of professional nursing-managing care.
- 20.0 Demonstrate competencies in the core components of the professional nurse leadership and delegation.

Florida Department of Education  
Student Performance Standards

**Program Title:** Registered Nurse  
**CIP Number:** 1351380100  
**Program Length:** 72 credit hours  
**SOC Code(s):** 29-1141

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Refer to Rule 6A-14.030 (4) F.A.C., for the minimum amount of general education coursework required in the Associate of Science (AS) degree. At the completion of this program, the student will be able to:**

**Associate Degree Nursing: Intended outcomes 12-20 complete the occupational exit of Associate Degree Nurse. Inherent within these intended outcomes is the utilization and application of the nursing process (assessment, diagnosis, planning, implementation, and evaluation) across the life span and in diverse settings within the health continuum.**

12.0	Demonstrate competencies in the core components of professional nursing regarding professional behaviors. -- The student will be able to:
12.01	Practice within the ethical, legal and regulatory frameworks of nursing and standards of professional nursing practice.
12.02	Report unsafe practices of healthcare providers using appropriate channels of communication.
12.03	Demonstrate accountability for nursing care given by self and or delegated to others.
12.04	Advocate for client rights.
12.05	Maintain organizational and client confidentiality.
12.06	Demonstrate behaviors of the professional nursing role in accordance with the ANA code of ethics.
12.07	Understand the role of professional organizations.
12.08	Serve as a professional role model within healthcare settings and the community at large.
12.09	Recognize the impact of political, social, and demographic forces on the delivery of health care.

12.10	Participate in lifelong learning.
12.11	Implement a plan to meet self-learning needs.
12.12	Delineate and maintain appropriate professional boundaries in the nurse-client relationship.
13.0	Demonstrate competencies in the core components of professional nursing-communication. -- The student will be able to:
13.01	Utilize therapeutic communication skills when interacting with clients and support person(s).
13.02	Communicate relevant, accurate and complete information in a concise, clear and timely manner to the client and support person(s) as well as interprofessional team members.
13.03	Document relevant, accurate and complete information regarding assessments, interventions and progress toward client outcomes.
13.04	Utilize information technology, including the use of electronic health records, to support and communicate the planning and provision of client care.
13.05	Utilize appropriate channels of communication to achieve positive client outcomes.
13.06	Determine the communication needs/preferences of individual clients and support persons(s).
14.0	Demonstrate competencies in the core components of the professional nurse regarding assessment. -- The student will be able to:
14.01	Assess the interaction patterns of the individual client or significant support person(s).
14.02	Assess the developmental, emotional, cultural, religious and spiritual influences on the client's health status.
14.03	Assess the client's health status by completing a health history and performing a physical, cognitive, psychosocial and functional assessment.
14.04	Assess client and significant support person(s) for learning strengths, capabilities, barriers and educational needs.
14.05	Assess the client's adaptation to health and behavior issues.
14.06	Assess the client's response to interventions.
14.07	Assess the client's knowledge and ability to access available resources to meet health needs.
14.08	Assess the environment for factors that may impact the client's health status.
15.0	Demonstrate competencies in the core components of the professional nurse regarding clinical decision-making. -- The student will be able to:
15.01	Make clinical judgments and management decisions to ensure accurate and safe care.
15.02	Utilize client data to plan care.
15.03	Evaluate the effectiveness of care provided in meeting client outcomes.

15.04	Modify client care as indicated by the evaluation of outcomes.
15.05	Participate in problem identification and data collection for research, quality control or improvement processes to meet client outcomes.
15.06	Use research and evidence based data to plan client care and support clinical decision-making.
16.0	Demonstrate competencies in the core components of the professional nurse regarding caring interventions. -- The student will be able to:
16.01	Promote the client's dignity.
16.02	Provide client centered nursing care based on emotional, cultural, religious and spiritual influences on the client in diverse settings.
16.03	Demonstrate caring behavior towards the client, support person(s), peers and other members of the healthcare team.
16.04	Implement the prescribed care regimen for management of clients with obstetric, pediatric, medical, surgical, geriatric, or psychiatric problems within the legal, ethical and regulatory framework of nursing practice.
16.05	Perform nursing interventions competently according to the current standards of professional nursing practice.
16.06	Provide a safe physical and psychosocial environment.
16.07	Assist the client and support person(s) to cope with and adapt to stressful events and changes in health status, including healthcare and end of life decision-making.
16.08	Assist the client and support person(s) to achieve optimum well-being.
16.09	Prepare the client and support person(s) for independent care management.
16.10	Implement appropriate procedures to meet regulatory and accreditation agency patient safety guidelines.
17.0	Demonstrate competencies in the core components of the professional nurse regarding teaching and learning. -- The student will be able to:
17.01	Develop an individualized teaching plan based on assessed needs.
17.02	Provide the client and support person(s) with the information to make choices regarding health in a manner that enables understanding.
17.03	Teach the client and support person(s) the information and skills needed to achieve the desired learning outcomes.
17.04	Evaluate the progress of the client and support person(s) toward achievement of the identified learning outcomes.
17.05	Modify the teaching plan based on evaluation of progress toward meeting the learning outcomes.
17.06	Provide assistive personnel with relevant instruction to support achievement of client outcomes.
17.07	Participate in client care that supports health promotion.



18.0	Demonstrate competencies in the core components of the professional nurse regarding collaboration. -- The student will be able to:
18.01	Develop interdisciplinary solutions based on the analysis of client problems to achieve optimum client outcomes.
18.02	Identify interdisciplinary resources to achieve optimum client outcomes.
18.03	Collaborate with the client, support person(s), and other interprofessional team members to evaluate progress toward achievement of outcomes.
19.0	Demonstrate competencies in the core components of the professional nurse regarding managing care. -- The student will be able to:
19.01	Prioritize client(s) care utilizing the nursing process.
19.02	Coordinate the implementation of an individualized plan of care for clients and support person(s).
19.03	Facilitate the continuity of care within and across healthcare settings.
19.04	Adapt client care to changing healthcare settings and management systems.
19.05	Assist the client and support person(s) to access available resources and services.
19.06	Demonstrate competence with current healthcare technologies and information systems.
19.07	Manage care for clients using cost effective nursing strategies, quality improvement processes and current technology.
20.0	Demonstrate competencies in the core components of the professional nurse regarding leadership and delegation. -- The student will be able to:
20.01	Describe the components of leadership.
20.02	Contrast leadership and management.
20.03	Describe the qualities of an effective leader.
20.04	Describe skills necessary for effective leadership of an interdisciplinary team.
20.05	Employ practices that build relationships and encourage teamwork.
20.06	Delegate aspects of client care that are within the scope of practice to appropriate members of the healthcare team.
20.07	Evaluate the activities delegated to members of the healthcare team.
20.08	Communicate effectively with all members of the health care team.
20.09	Demonstrate a collaborative approach while leading a team.
20.10	Coordinate the decision making process with the client, support person(s), and other members of the health care team.

20.11	Implement nursing strategies that support efficient and cost effective care.
20.12	Describe how a leader utilizes research for evidence-based practice effecting positive client outcomes.
20.13	Describe how effective leadership influences unit culture, client outcomes and the achievement of organization goals.
20.14	Describe the leader's role related to quality measures, performance improvement and the accreditation and regulatory requirements.
20.15	Employ effective conflict resolution strategies that promote a healthy work environment.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

The following PSAV programs have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Practical Nursing – CIP# 0351390101 – 10 credits

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into this degree program.

Licensed Practical Nurse (FDMQA017) – 10 credits

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Reinforcement of basic skills in English, mathematics, and sciences appropriate for the job preparatory programs occurs through didactic instruction and applied laboratory procedures or practice.

The location of the ADN program within the community college setting provides an appropriate academic environment for instruction in the biological, physical, social, and behavioral sciences. The community college setting further provides instruction in the communication skills basic to the successful performance of the ADN graduate in the work setting. This body of knowledge supports concepts specific to the practice of nursing.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, and community issues and health, safety, and environmental issues.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**       **Massage Therapy**  
**Program Type:**       **Career Preparatory**  
**Career Cluster:**      **Health Science**

**Career Certificate Program**

Program Number	H120406
CIP Number	0351350102
Grade Level	30, 31
Standard Length	750 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9011 Massage Therapists 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as Florida licensed massage therapists, all other service workers. SOC Code 31-9011-(Massage Therapists).

The content includes but is not limited to the theory and practice of massage, theory and practice of hydrotherapy, hygiene, practice demonstration, human anatomy and physiology, legal aspects of massage practice, allied modalities, leadership and human relations skills, health and safety, CPR, and employability skills. Colonic irrigation is optional post initial licensure.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	MSS0204	Massage Therapy 1	MASSAGE TH 7 G	375 hours	31-9099
B	MSS0209	Massage Therapy 2		375 hours	31-9011

## **Regulated Programs**

The program must be approved by the Florida Department of Health, Board of Massage Therapy so that the graduates may take the board approved examination to practice as massage therapists.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

After completion of this program students will be eligible to make an application to take the licensure examination approved by the Board of Massage Therapy.

Contact: Department of Health  
Board of Massage Therapy  
4052 Bald Cypress Way  
Bin # CO6  
Tallahassee, FL 32399 850/488-0595

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Colonic irrigation instruction is optional post initial licensure. If such instruction is provided, it must meet minimum standards as provided per the Board of Massage Therapy rule 64B7-32.005.

Course of Study Classroom Hours as stated in F.A.C. 64B7-32.003 -

Anatomy and Physiology	150
Basic Massage Theory and History	100
Clinical Practicum	125
Allied Modalities	76
Business	15
Theory and Practice of Hydrotherapy	15
Florida Laws and Rules (Chapters 456 and 480, F.S. and Chapter 64B7, F.A.C.)	10
Professional Ethics	4
HIV/AIDS Education	3
Medical Errors	2

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to communicate effectively as a medical therapy professional.
- 02.0 Demonstrate an understanding of human anatomy and physiology, kinesiology and pathology as related to the practice of massage therapy.
- 03.0 Exhibit an understanding of the principles of the theories of therapeutic massage and demonstrate the proper techniques of massage manipulations.
- 04.0 Demonstrate the recommended safety, hygiene and health practices for the massage therapist.
- 05.0 Exhibit an understanding of the principles of the theory of hydrotherapy and use hydrotherapy modalities.
- 06.0 Explain and appropriately apply allied modalities related to massage therapy.
- 07.0 Demonstrate knowledge of ethical practice standards and the statutes and rules of Florida Massage Practice Act and the rules of the FL Board of Massage Therapy (Chapter 480, F.S.; Chapter 64B7; Chapter 456).
- 08.0 Demonstrate knowledge of basic business practices and standards.

Florida Department of Education  
Student Performance Standards

Program Title: Massage Therapy  
Career Certificate Program Number: H120406

<b>Course Number: MSS0204</b>	
<b>Occupational Completion Point: A</b>	
<b>Massage Therapy 1 – 375 Hours – SOC Code 31-9099</b>	
01.0	Demonstrate the ability to communicate effectively as a medical therapy professional. -- The student will be able to:
01.01	Demonstrate knowledge of professional communication, active listening skills, and ability to interview the client/patient to ascertain his/her indications and/or contraindications for therapy.
01.02	Demonstrate knowledge and use of appropriate medical terminology and ability to perform proper S.O.A.P (Subjective, objective, assessment and plan) notation in the field of massage therapy.
01.03	Demonstrate knowledge of the Patients’ Bill of Rights and informed consent.
01.04	Identify and demonstrate Health Insurance Portability and Accountability Act (HIPAA) standards within the massage therapy treatment and business setting.
02.0	Demonstrate an understanding of human anatomy and physiology, kinesiology and pathology as related to the practice of massage therapy. – The student will be able to:
02.01	Explain the structure and function of all the body systems, organs, tissues and cells with emphasis on origins, insertions and actions of muscles.
02.02	Explain the concept of homeostasis and how it relates to massage therapy and its modalities.
02.03	Explain the effects of massage on the human body.
02.04	Demonstrate a basic knowledge of kinesiology.
02.05	Demonstrate a basic knowledge of various body systems’ pathology.
03.0	Exhibit an understanding of the principles of the theories of therapeutic massage and demonstrate the proper techniques of massage manipulations. – The student will be able to:
03.01	Explain the mechanical, reflexive and physiologic chemical effects of therapeutic massage.
03.02	Demonstrate knowledge of the effects, usage, indications and contraindications of various lubricants in massage therapy and apply appropriately.
03.03	Demonstrate awareness of professional boundaries using acknowledgement of body language, verbal communication, and cultural cues.
03.04	Practice proper body mechanics.

03.05	Accurately perform all therapeutic massage strokes and manipulations.
03.06	Demonstrate Proper client/patient positioning, support and draping techniques.
03.07	Demonstrate an understanding of initial treatment plan assessment, & re-assessment and treatment indications and contraindications of massage therapy.
03.08	Apply various massage therapy techniques properly when presented with various pathological conditions and contraindications.
03.09	Effectively operate common massage therapy equipment which may include electrical devices such as vibrating tools and electronic simulation, where applicable.
04.0	Demonstrate the recommended safety, hygiene and health practices for the massage therapist. -- The student will be able to:
04.01	Explain the ways a massage establishment should be planned and maintained to promote health and safety including fire, disaster and evacuation procedures.
04.02	Outline practices conducive to personal health, hygiene and appearance.
04.03	Demonstrate knowledge of measures conducive to eliminating medical errors
04.04	Demonstrate an understanding of diseases caused by airborne and blood borne pathogens and their legal aspects.

**Course Number: MSS0209**  
**Occupational Completion Point: B**  
**Massage Therapy 2 – 375 Hours – SOC Code 31-9011**

05.0	Exhibit an understanding of the principles of the theory of hydrotherapy and use hydrotherapy modalities. -- The student will be able to:
05.01	Explain the effects of hydrotherapy on the human body.
05.02	Interview the clients/patients to ascertain their indications and/or contraindications for hydrotherapy.
05.03	Appropriately perform hydrotherapy services such as thermal therapy and cryotherapy.
05.04	Demonstrate knowledge of accepted temperature and time standards for hydrotherapy techniques.
05.05	Educate clients/ patients in the use of various hydrotherapy self-care techniques.
06.0	Explain and appropriately apply allied modalities related to massage therapy. – The student will be able to:
06.01	Identify various modalities utilized within the scope of practice of massage therapy.
06.02	Identify allied modalities outside the scope of massage therapy for the purposes of referral.
06.03	Explain the effects on the human body while utilizing various massage allied modalities.

06.04	Educate clients/patients in the use of various self-care techniques and applications including stretching and joint movement.
07.0	Demonstrate knowledge of ethical practice standards and the statutes and rules of Florida Massage Practice Act and the rules of the Florida Board of Massage Therapy (Chapter 480, F.S.; Chapter 64b7; Chapter 456). – The student will be able to:
07.01	State the purpose of the Massage Practice Act. (Chapter 456 and 480, F.S. and Rule 64B7 F.A.C.)
07.02	State the qualifications necessary for licensure and renewal of license.
07.03	State the function of the Board of Massage Therapy and the Department of Health.
07.04	State the conditions necessary for acceptance for examination for licensure.
07.05	State the requirements for massage therapy establishments and their inspection.
07.06	Understand the grounds for which disciplinary actions may be taken by the Board of Massage Therapy.
07.07	Define the terms: Board, Department, Massage Therapist, Apprentice, Inactive Licensure, Massage Establishment, Certification and Licensure.
07.08	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.
07.09	Demonstrate knowledge of ethical conduct in the massage therapy practice and the responsibility to report ethical violations.
07.10	Discuss the massage therapists' responsibility to report abuse including domestic violence and neglect per the vulnerable persons act, including strategies for identifying, assessing, and responding to clients who may be current or past victims of human trafficking.
07.11	Understand the importance of and practice proper medical documentation, including storage and disposal.
08.0	Demonstrate knowledge of basic business practices and standards. -- The student will be able to:
08.01	Define basic business practices and standards, including basic components of public private government and nonprofit healthcare delivery systems.
08.02	Identify the function, roles and responsibilities of the massage therapist as part of the health care team.
08.03	List the advantages and disadvantages of business ownership versus independent contractor versus employee.
08.04	Identify the necessary personal characteristics of a successful entrepreneur and a successful employee.
08.05	Demonstrate the ability to create a resume and find employment opportunities with the use of current technology.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs occurs through vocational classroom instruction and applied laboratory procedures or practice.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Dental Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170106
CIP Number	0351060112
Grade Level	30, 31
Standard Length	1230 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9091 Dental Assistants 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as dental assistants (SOC code 31-9091) and to take the Dental Assisting National Board Examination. The program should meet the requirements of the Commission on Dental Accreditation of the American Dental Association and standards recommended by the Florida Board of Dentistry.

The content includes, but is not limited to, dental office and patient management, basic dental laboratory procedures, dental and general anatomy, dental terminology, nutrition, dental instrument and equipment utilization, microbiology, dental pharmacology and anesthesia, chairside assisting and expanded functions, dental office emergencies/CPR, dental radiography, maintenance and asepsis of dental operatory and instrumentation,

dental specialty procedures, employability skills, leadership and human relations skills, ethics and jurisprudence, dental materials and preventive dentistry.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	DEA0725	Introduction to Dental Assisting	DENTL ASST @7 7G	90 hours	31-9099
B	DEA0726	Dental Infection Control Assistant		210 hours	31-9099
C	DEA0727	Dental Assisting 1		465 hours	31-9091
	DEA0728	Dental Assisting 2		465 hours	



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the dental health care delivery system and dental health occupations.
- 02.0 Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas.
- 03.0 Describe the legal and ethical responsibilities of the dental health care worker.
- 04.0 Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts.
- 05.0 Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Use information technology tools. (Optional)
- 08.0 Explain the importance of employability skills.
- 09.0 Demonstrate knowledge of airborne and blood borne diseases.
- 10.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 11.0 Use dental terminology.
- 12.0 Identify structures and explain functions and pathologies of dental and general head and neck anatomy.
- 13.0 Identify principles of microbiology and disease prevention and perform infection control procedures.
- 14.0 Identify, describe, maintain and utilize dental instruments and equipment.
- 15.0 Record patient assessment and treatment data.
- 16.0 Identify the functions of pharmacology and anesthesia as they relate to dentistry.
- 17.0 Identify and perform dental radiographic procedures.
- 18.0 Identify properties and uses, and manipulate dental materials.
- 19.0 Perform chairside assisting for general dentistry and specialty procedures.
- 20.0 Describe principles and perform techniques of preventive dentistry.
- 21.0 Perform general dental business office procedures.
- 22.0 Demonstrate professionalism as a dental team member in the clinical setting.

Florida Department of Education  
Student Performance Standards

Program Title: Dental Assisting  
Career Certificate Program Number: H170106

<b>Course Number: DEA0725</b>	
<b>Occupational Completion Point: A</b>	
<b>Introduction to Dental Assisting – 90 Hours – SOC Code 31-9099</b>	
01.0	Demonstrate knowledge of the dental health care delivery system and dental health occupations. – The student will be able to:
01.01	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.
01.02	Describe the various types of dental health care providers and the range of services available.
01.03	Describe the composition and functions of a dental health care team.
01.04	Identify the general roles and responsibilities of the individual members of the dental health care team.
01.05	Identify the roles and responsibilities of the consumer within the dental healthcare system.
01.06	Explain the cause and effects of factors that influence the current delivery system of dental healthcare.
01.07	Discuss the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.
01.08	Discuss the history of dentistry.
02.0	Use oral, written, and electronic communication skills with professional etiquette in creating, expressing and interpreting information and ideas. – The student will be able to:
02.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Compose written communication using correct spelling, grammar, formatting and confidentiality and specific formats of letter writing.
02.05	Recognize components of medical and dental terminology and abbreviations.
02.06	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
02.07	Recognize the importance of patient education regarding dental and health care.

02.08	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.09	Identify psychological considerations influencing communication and behaviors.
03.0	Describe the legal and ethical responsibilities of the dental health care worker. – The student will be able to:
03.01	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC and Rule 64B5-25 FAC applicable to practice by the dental health workers.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment. and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the patients' "Bill of Rights".
03.06	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA) and apply these standards to social media.
03.07	Distinguish between expressed, implied, and informed consent.
03.08	Explain the laws governing harassment, labor and employment.
03.09	Differentiate between legal and ethical issues in dentistry.
03.10	Describe a Code of Ethics consistent with the dental assisting profession.
03.11	Identify and compare personal, professional and organizational ethics.
03.12	Recognize the limits of authority and responsibility of dental health care workers including legislated scope of practice.
03.13	Recognize and report illegal and/or unethical practices of dental health care workers.
03.14	Recognize and report abuse including domestic violence and neglect.
03.15	Identify resources to victims of domestic violence.
03.16	Explain risk management.
04.0	Demonstrate an understanding of general anatomy and physiology and apply wellness and disease concepts. – The student will be able to:
04.01	Develop a basic understanding of the structure and function of the body systems.
04.02	Identify common disorders related to each of the body systems.
04.03	Explain basic concepts of positive self-image, wellness, and stress.

04.04	Develop a wellness and stress control plan that can be used in personal and professional life.
05.0	Demonstrate the importance of health, safety, and environmental management systems in dental organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
05.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
05.02	Identify and describe methods in medical error reduction and prevention in the dental healthcare setting.
05.03	Demonstrate an understanding of personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.04	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
05.05	Demonstrate procedures for the safe transport and transfer of patients.
05.06	Describe fire safety, disaster, and evacuation procedures.
05.07	Explain emergency procedures to follow in response to workplace accidents.
05.08	Demonstrate handwashing and the use of personal protective equipment used in dentistry.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Take and record vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain certification in basic life support (BLS), cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
07.0	Use information technology tools. (Optional) – The student will be able to:
07.01	Define terms and demonstrate basic computer skills.
07.02	Interpret information from electronic medical documents.
08.0	Explain the importance of employability skills. – The student will be able to:
08.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
08.02	Exemplify basic professional standards of dental healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
08.03	Prepare and maintain a professional portfolio to document knowledge, continued education, skills, and experience. (Optional)
08.04	Write an appropriate resume.
08.05	Conduct a job search and complete a job application form correctly.

08.06	Demonstrate competence in job interview techniques.
08.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.
08.08	Examine licensing, certification, and industry credentialing requirements.
09.0	Demonstrate knowledge of airborne and blood borne diseases. – The student will be able to:
09.01	Recognize emerging diseases and disorders.
09.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by airborne and blood borne pathogens.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by airborne and blood borne pathogens and the public education necessary to combat the spread of these diseases.
09.04	Identify community resources and services available to the individuals with diseases caused by airborne and blood borne pathogens.
09.05	Apply infection control techniques designed to prevent the spread of diseases caused by airborne and blood borne pathogens to the care of all patients following Centers for Disease Control and Prevention (CDC) guidelines.
09.06	Demonstrate knowledge of the legal aspects of AIDS, including testing.
10.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
10.01	Analyze attributes and attitudes of an effective leader to include emotional intelligence.
10.02	Recognize factors and situations that may lead to conflict.
10.03	Demonstrate effective techniques for managing team conflict.

**Course Number: DEA0726**  
**Occupational Completion Point: B**  
**Dental Infection Control Assistant – 210 Hours – SOC Code 31-9099**

11.0	Use dental terminology. -- The student will be able to:
11.01	Identify and define common dental terms.
11.02	Demonstrate the use of proper dental terminology in the dental environment.
12.0	Identify structures and explain functions and pathologies of dental and general head and neck anatomy. -- The student will be able to:
12.01	Identify structures and functions of head and neck anatomy including bones, muscles, sinuses, salivary glands, lymph nodes, nerves, and blood vessels.
12.02	Identify embryonic development of head, oral cavity, and teeth.

12.03	Identify teeth and their landmarks, and the morphological characteristics of each individual tooth.
12.04	Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.
12.05	Recognize and describe oral pathological conditions, related to the teeth and their supporting structures.
12.06	Recognize and describe developmental anomalies related to the teeth, face, and oral structures.
12.07	Describe and differentiate between normal and malocclusion.
12.08	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the oral cavity.
13.0	Identify principles of microbiology and disease prevention and perform infection control procedures. -- The student will be able to:
13.01	Differentiate between pathogenic and non-pathogenic microorganisms.
13.02	Describe pathogens and modes of disease transmission.
13.03	Differentiate between aseptic and non-aseptic environments.
13.04	Describe and apply methods of cleaning, disinfection, and sterilization.
13.05	Identify chemicals and their uses for controlling the spread of disease in the dental environment.
13.06	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.
13.07	Describe the duties of the dental office safety coordinator.
13.08	Demonstrate compliance with the OSHA Blood Borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.
13.09	Identify and manage hazardous chemicals and biomedical wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200), 64E-16 F.A.C., and Environmental Protection Agency regulations.
13.10	Define principles of infection control including standard and transmission based precautions.
13.11	Demonstrate knowledge of dental asepsis.
13.12	Implement appropriate hand hygiene procedures and use of protective barriers.
13.13	Demonstrate knowledge of surgical asepsis and isolation.
14.0	Identify, describe, maintain and utilize dental instruments and equipment.--The student will be able to:
14.01	Identify various types, functions and operations of dental operator and laboratory equipment.
14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.

14.03	Maintain dental operatory equipment and instruments.
14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
14.05	Seat and dismiss patients.
14.06	Operate oral evacuation devices and air/water syringe.
14.07	Maintain a clear field of vision including isolation techniques.
14.08	Perform a variety of instrument transfers to include four-handed dentistry.
14.09	Utilize appropriate chairside assistant ergonomics.

**Course Number: DEA0727**  
**Occupational Completion Point: C**  
**Dental Assisting 1 – 465 Hours – SOC Code 31-9091**

15.0	Record patient assessment and treatment data. -- The student will be able to:
15.01	Take and record medical-dental histories.
15.02	Record assessment of existing oral conditions.
15.03	Perform intraoral and extraoral photography.
15.04	Record conditions diagnosed by the dentist.
15.05	Record treatment-related data on the patient's clinical record.
15.06	Record treatment plan and treatment in patient's chart.
15.07	Perform a visual assessment of existing oral conditions.
15.08	Distinguish between and report subjective and objective information.
16.0	Identify the functions of pharmacology and anesthesia as they relate to dentistry. -- The student will be able to:
16.01	Identify drug requirements, agencies, and regulations including prescribing regulations related to medications subject to addiction.
16.02	Distinguish among the five schedules of controlled substances.
16.03	Record a drug prescription in a patient's chart.
16.04	Utilize ratios and proportional problems to calculate prescribed drug dosages.



16.05	Identify drug actions, side effects, indications and contraindications; verify with Physician's Desk Reference (PDR) or its equivalent.
16.06	Identify common drugs used in dentistry.
16.07	Prepare and apply topical anesthetic agent.
16.08	Identify properties of anesthetics.
16.09	Prepare syringes for the administration of local anesthetics.
16.10	Monitor and identify precautions in the use of nitrous oxide-oxygen conscious sedation.
16.11	Calculate the percentage of nitrous oxide-oxygen delivered during a conscious sedation procedure.
16.12	Identify drugs and agents used for treating dental-related infection.
16.13	Identify and respond to dental office emergencies.
16.14	Describe the signs and symptoms of drug addiction.
16.15	Discuss the dental team's responsibility to recognize patients with drug addictions.
17.0	Identify and perform dental and carpal radiographic procedures -- The student will be able to:
17.01	Describe history, physics and biological effects of ionizing radiation.
17.02	Identify parts of the X-ray machine including accessories.
17.03	Demonstrate radiologic health protection techniques.
17.04	Describe dark room/processing procedures, mix solutions.
17.05	Describe the proper disposal of hazardous radiographic waste.
17.06	Place and expose dental radiographic films or phosphors and digital sensors.
17.07	Perform extraoral radiography as required for dental diagnostic procedures.
17.08	Identify radiographic anatomical landmarks and pathologies.
17.09	Mount radiographic surveys.
17.10	Describe how to maintain unexposed film inventory and storage.
17.11	Maintain digitally acquired radiographic images.

17.12	Practice infection control procedures for all radiographic procedures.
18.0	Identify properties and uses, and manipulate dental materials. -- The student will be able to:
18.01	Identify properties and uses and manipulate gypsum.
18.02	Identify properties and uses and manipulate restorative materials.
18.03	Identify properties and uses and manipulate dental cements.
18.04	Place and remove matrices as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.05	Place and remove temporary restorations as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.06	Identify properties and uses and manipulate impression materials.
18.07	Make intraoral impressions as permitted by Florida Statute and Florida Board of Dentistry Rule.
18.08	Identify properties and uses and manipulate acrylics and thermoplastics.
18.09	Identify properties and uses and manipulate waxes.
18.10	Perform dental laboratory procedures to include the fabrication of casts, custom trays, whitening trays, temporary crowns, and bridges.
18.11	Identify and manage hazardous dental materials and wastes in accordance with the OSHA Hazard Communications Standard (29CFR-1910.1200) and Environmental Protection Agency regulations.
18.12	Employ measurements of time, temperature, distance, capacity, and mass/weight during the manipulation of dental materials.
19.0	Perform chairside assisting for general dentistry and specialty procedures. -- The student will be able to:
19.01	Describe procedures, equipment, materials, and instrumentation used in the dental specialties to include but not limited to periodontics, endodontics, pedodontics, oral surgery, orthodontics, and prosthodontics.
19.02	Assemble tray set-ups for general and specialty dental procedures.
19.03	Assist in general and specialty dental procedures.
19.04	Describe the special needs of patients during dental procedures.
19.05	Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.
19.06	Describe procedures, equipment, and materials utilized in digital dentistry to include CAD/CAM Technology.

**Course Number: DEA0728**  
**Occupational Completion Point: C**  
**Dental Assisting 2 – 465 Hours – SOC Code 31-9091**

20.0 Describe principles and perform techniques of preventive dentistry. -- The student will be able to:

20.01 Describe the process of oral biofilm formation and its management through preventative dentistry.

20.02 Provide patient preventive education and oral hygiene instruction.

20.03 Prepare and set up for various preventive procedures.

20.04 Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.

20.05 Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.

20.06 Clean and polish removable dental appliances.

20.07 Apply dental sealants as permitted by Florida Statute and Florida Board of Dentistry Rule.

20.08 Identify the elements of nutrition, basic food groups, and acceptable diets as recommended by the U.S. Department of Agriculture.

20.09 Identify dietary deficiencies and dietary practices that contribute to the manifestation of symptoms in the oral cavity.

20.10 Identify community dental resources and services available.

21.0 Perform general dental business office procedures. -- The student will be able to:

21.01 Maintain appointment control.

21.02 Maintain an active recall system.

21.03 Prepare and maintain accurate patient records.

21.04 Prepare and maintain patient financial records, collect fees.

21.05 Demonstrate the use of dental procedure codes and current terminology when preparing and managing insurance claims.

21.06 Differentiate the different categories of dental procedure codes.

21.07 Prepare and maintain office financial records.

21.08 Prepare and maintain dental office inventory control and purchasing.

21.09 Demonstrate public relations responsibilities of the secretary/receptionist.

21.10 Demonstrate skills on office equipment.

21.11	Maintain the dental business office environment.
21.12	Receive and dismiss patients and visitors.
21.13	Demonstrate appropriate patient management/customer service skills.
21.14	Describe the effect of money management on practice goals.
22.0	Demonstrate professionalism as a dental team member in the clinical setting. – The student will be able to:
22.01	Perform dental assisting duties, dental assisting expanded functions, and dental radiographic procedures in a clinical setting under the direct supervision of a licensed dentist.
22.02	Interact with a professional dental team in the delivery of patient services.
22.03	Utilize employability skills.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Field Internship Activities: Clinical experiences are integrated with the didactic portion of this program. Clinical experience assisting a dentist must be an integral part of the educational program designed to perfect students' competence in performing dental assisting functions, rather than to provide basic instruction. The major portion of the students' time in clinical assignments must be spent assisting with or participating in patient care. Prior to clinical assignments, students demonstrate minimum competence in performing the procedures which they will be expected to perform in their clinical experience.

### Special Notes

Dental assisting programs accredited by the American Dental Association Commission on Dental Accreditation are required to implement enrollment and admissions criteria that include the selection of adult students with a high school diploma, its equivalent, or an advanced degree.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the goals of TECH PREP and is based on the model developed by the Allied Health Articulation Task Force.

This program should meet the most current edition of the American Dental Association Accreditation Standards for Dental Assisting Education Programs. For further information, contact: Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611.

For Florida information contact the Florida Agency for Health Care Administration (AHCA), Division of Health Quality Assurance, Board of Dentistry, 4052 Bald Cypress Way, Tallahassee, FL 32399, 850/245-4161.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Pursuant to 466.024 F.S., 64B5-16.002 F.A.C. and 64B5-9.011 F.A.C., completers of the dental assisting program may be awarded a certificate verifying formal training which is required for the performance of certain remediable tasks (also known as expanded functions.)

Students should be encouraged to become members and participate in the activities of the professional organization: The American Dental Assistants Association.

Completers of the dental assisting program should be encouraged to take the Dental Assisting National Board (DANB) Certified Dental Assistant (CDA) exam. DANB is recognized by the American Dental Association as the national certification board for dental assistants.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Health Unit Coordinator/ Monitor Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170107
CIP Number	0351070302
Grade Level	30, 31
Standard Length	630 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	43-6013 Medical Secretaries 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to interpersonal skills, medical terminology, legal and ethical responsibilities, safe and efficient work practices, clerical skills, safety and security use of computers, interpretation and transcription of doctors' orders, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.



This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G MED RECTEC 7G	90 hours	31-9099
B	HIM0076	Health Unit Clerk		410 hours	43-6013
C	HIM0090	Monitor Technician		130 hours	43-6013

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use oral and written communication skills in creating, expressing and interpreting information and ideas.
- 13.0 Describe the importance of professional ethics and legal responsibilities for the Health Unit Coordinator.
- 14.0 Interpret and apply medical terminology specific to health unit clerks.
- 15.0 Organize and maintain efficient work practices.
- 16.0 Perform clerical duties.
- 17.0 Perform patient admission, transfer and discharge procedures.
- 18.0 Prepare discharge/transfer chart for medical records/new unit.
- 19.0 Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.
- 20.0 Read, interpret, process, coordinate and transcribe physicians' orders.
- 21.0 Demonstrate an understanding of the Health Unit Coordinators role in the Nutritional Care Department.
- 22.0 Demonstrate an understanding of the Health Unit Coordinators role in processing diagnostic orders.
- 23.0 Explain the importance of employability skills and entrepreneurship skills for the Health Unit Coordinator.
- 24.0 Describe the cardiovascular system.
- 25.0 Identify legal and ethical responsibilities of an EKG Monitor Technician.
- 26.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 27.0 Perform patient care techniques in the health care facility.
- 28.0 Recognize normal and abnormal cardiac telemetry monitoring results.
- 29.0 Describe common cardiovascular drugs, their actions, use and adverse effects.
- 30.0 Set up telemetry monitoring, interpret and report abnormal rhythms to the nurse.
- 31.0 Monitoring, interpreting and reporting abnormal rhythms (dysrhythmias) to the nurse.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Health Unit Coordinator  
Career Certificate Program Number: H170107**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HIM0076  
Occupational Completion Point: B  
Health Unit Clerk – 410 Hours – SOC Code 43-6013**

12.0	Use oral and written communication skills in creating, expressing and interpreting information and ideas. --The student will be able to:
12.01	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques when using the telephone and answering patient call lights.
12.02	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
12.03	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
12.04	Apply active listening skills to obtain and clarify information.
12.05	Exhibit public relations skills that aid in achieving customer satisfaction including face to face interactions.
12.06	Explain why implementation of the electronic medical record is requiring advanced communication skills for the health unit coordinator (HUC).
12.07	Give instances that exemplify human needs, classify each according to Maslow’s hierarchy of human needs, and give appropriate responses to meet the listed needs.
12.08	Define and explain the importance of culturally sensitive care in the health care setting.
12.09	List five guidelines to follow that could improve intercultural communication.

13.0	Describe the importance of professional ethics and legal responsibilities for the Health Unit Coordinator. – The student will be able to:
13.01	List seven patient rights as outlined in HIPAA.
13.02	Identify seven patient identifiers (individually identifiable health information [IIHI]).
13.03	Explain two purposes of the Health Information Technology for Economic and Clinical Health (HITECH) Act.
13.04	Explain the responsibilities the health unit coordinator (HUC) has for HIPAA compliance.
13.05	Evaluate alternative responses to workplace situations based on personal, professional, ethical, legal responsibilities, and employer policies.
14.0	Interpret and apply medical terminology specific to health unit clerks. – The student will be able to:
14.01	Identify components of medical terms.
14.02	Spell, pronounce, and define medical terms as related to Health Unit Coordinator.
14.03	Relate medical terminology to the body systems.
14.04	Identify and define standard abbreviations and medical symbols.
14.05	Identify apothecary and metric systems.
15.0	Organize and maintain efficient work practices. -- The student will be able to:
15.01	Arrange daily activities by priority.
15.02	Prepare and post unit information lists.
15.03	Maintain a supply of assembled medical/surgical admission packets when using paper charts or standard forms.
15.04	Distribute forms and articles from in-basket.
15.05	Identify, store and maintain unit equipment/supplies in a neat and orderly manner.
15.06	Sanitize nursing station equipment.
15.07	Maintain par levels of supplies as required by the nursing unit
15.08	Greet all visitors to the nursing unit and offer assistance as necessary.
16.0	Perform clerical duties. – The student will be able to:
16.01	Demonstrate knowledge of common software applications relevant to the role of the health unit coordinator.

16.02	Prepare, label and add forms to chart.
16.03	Record non-clinical admission data on unit records.
16.04	Obtain previous admission records/X-rays.
16.05	Post all reports on charts.
16.06	File and retrieve assorted forms.
16.07	Maintain patient tracking for patients leaving the unit (electronic or paper log).
16.08	Conduct “down time” procedure when electronic record program is unavailable due to scheduled downtime or unexpected downtime.
17.0	Perform patient admission, transfer and discharge procedures. – The student will be able to:
17.01	List four types of admissions and three types of patients.
17.02	List the common components of a set of admission orders and common health unit coordinator (HUC) tasks regarding the patient’s admission when paper charts are used.
17.03	Describe how a surgical patient’s admission orders differ from a medical patient’s admission orders and discuss three options for the way in which patient surgeries are performed.
17.04	List the components that may be included in a set of pre/postoperative orders.
17.05	Explain why it is important for the HUC to monitor the patient’s electronic medical record (EMR) consistently.
17.06	Explain the purpose and the benefits of the electronic patient status tracking board for the patient’s family and/or friends.
17.07	Explain what the HUC’s responsibility would be regarding all medical records, including patient signed consent forms, handwritten progress notes, and reports faxed or sent from other facilities or brought in by a patient when the EMR with computer physician order entry (CPOE) is implemented.
18.0	Prepare discharge/transfer chart for medical records/new unit. – The student will be able to:
18.01	List the different types of discharges and explain the importance of communicating pending discharge information and bed availability to the admitting department or bed placement in a timely manner.
18.02	List the tasks that may be required to complete a routine discharge.
18.03	List the additional tasks that may be required when a patient is discharged to another facility, discharged home with assistance, or when a patient dies (postmortem).
18.04	Describe the tasks necessary to prepare the discharged patient’s medical record for the health information management services (HIMS) department when paper charts are used.
18.05	List the tasks that are performed when a patient is transferred from one unit to another.
18.06	List the tasks performed by the HUC when a patient is transferred from one room to another room on the same unit.

18.07	Discuss the importance of reading the entire set of discharge or transfer orders prior to the patient being discharged or transferred.
19.0	Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. – The student will be able to:
19.01	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
19.02	Participate in emergency or disaster plan, CPR and first aid.
19.03	Identify the location of emergency equipment on the nursing unit.
19.04	Recognize and follow all appropriate emergent code protocols.
19.05	Comply with regulatory agency guidelines.
20.0	Read, interpret, process, coordinate and transcribe physicians' orders. – The student will be able to:
20.01	Identify all types of physician's orders.
20.02	Prioritize orders for transcription.
20.03	Prepare and route requisitions manually or via computer.
20.04	Arrange for ordered consultations.
20.05	Schedule patients' treatments or therapy with other hospital departments.
21.0	Demonstrate an understanding of the Health Unit Coordinators role in the Nutritional Care Department. – The student will be able to:
21.01	Explain the importance of communicating diet changes and patient food allergies to the nutritional care department.
21.02	List the groups of diets including nutritional supplements that may be ordered for the hospitalized patient.
21.03	List consistency changes that can be made to a standard diet and explain what is included in each.
21.04	List diet options that may be selected for the patient who has started on clear liquids and has an order for diet as tolerated and explain how the selection would be made.
21.05	Identify therapeutic diets that the patient's doctor may order.
21.06	Identify diets that may be requested by patients and assist them in ordering appropriate meals.
21.07	List the items an HUC may need to order when transcribing an order for tube feeding.
21.08	Explain the purpose of the doctors' orders force fluids, limit fluids, and calorie count.
21.09	Discuss the importance of sending all doctors' orders regarding a patient's diet or modifications to a patient's diet to the nutritional care department.

21.10	Discuss the importance of sending total parenteral nutrition (TPN) orders to the pharmacy in a timely manner via fax, pneumatic, or dumb waiter system.
22.0	Demonstrate an understanding of the Health Unit Coordinators role in processing diagnostic orders. – The student will be able to:
22.01	List the major divisions of the clinical laboratory and their functions.
22.02	List six invasive procedures that would require a consent form signed by the patient.
22.03	Describe the health unit coordinator's responsibilities in ordering laboratory tests and sending specimens to the laboratory when EMR is used and when paper charts are used and describe how routine, stat, daily, and timed studies would be ordered and performed.
22.04	Explain how the health unit coordinator's responsibilities regarding diagnostic imaging orders differ with the implementation of the electronic medical record and computer physician order entry versus use of the paper chart.
22.05	List the required patient information needed when ordering procedures to be performed by the diagnostic imaging department.
22.06	Explain when a patient would be required to sign an informed consent before a diagnostic imaging procedure.
22.07	Discuss sequencing or scheduling of multiple diagnostic imaging procedures ordered for the same patient.
22.08	Demonstrate an understanding of other diagnostic studies.
23.0	Explain the importance of employability skills and entrepreneurship skills for the Health Unit Coordinator. – The student will be able to:
23.01	Discuss benefits and responsibilities of the HUC as a member of a professional organization.
23.02	List five benefits of becoming a certified HUC.
23.03	List three positions in which the HUC may be cross-trained.
23.04	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
23.05	Observe professional e-mail practices and etiquette.

**Course Number: HIM0090**  
**Occupational Completion Point: C**  
**Monitor Technician – 130 Hours – SOC Code 43-6013**

24.0	Describe the cardiovascular system. -- The student will be able to:
24.01	Locate the heart and surrounding structures.
24.02	Using a diagram label the parts of the heart and list the functions of each labeled part.
24.03	Trace the flow of blood through the cardiopulmonary system.



24.04	Identify and describe the electrical conduction system.
25.0	Identify legal and ethical responsibilities of an EKG Monitor Technician--The student will be able to:
25.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG Monitor Tech.
25.02	Maintain a safe and efficient work environment.
25.03	Maintain EKG monitoring equipment so it will be safe and accurate.
25.04	Implement appropriate monitoring of hospital patient safety goals.
26.0	Demonstrate knowledge of, apply, and use medical instrumentation modalities. -- The student will be able to:
26.01	Operate cardiac telemetry monitoring equipment related to admitting and discharging patients, trending, changing alarm parameters, changing leads and changing cardiac monitoring paper.
26.02	Troubleshooting monitor equipment, cleaning and maintaining monitoring equipment.
26.03	Identify three types of lead systems.
26.04	Describe correct anatomic placement of standard limb, augmented, and chest (precordial) leads.
26.05	List three common causes of artifact and the techniques to correct them.
26.06	Recognize normal sinus rhythm.
26.07	Report any rhythm that is not normal sinus rhythm.
26.08	List the three leads that form Einthoven's triangle.
26.09	Recognize a cardiac emergency as seen on the EKG monitor and explain the importance of rapid reporting.
27.0	Perform patient care techniques in the health care facility. -- The student will be able to:
27.01	Verify requisition order with patient identification band.
27.02	Identify patient utilizing name, date of birth, and medical and/or financial number.
27.03	Prepare the patient for lead placement.
28.0	Recognize normal and abnormal cardiac telemetry monitoring results.-- The student will be able to:
28.01	Consistently apply a systematic approach to analyze and interpret heart rhythm strips.
28.02	Identify and examine wave forms, segments, and complexes.

28.03	Measure PRI, QRS, QTI, and calculate heart rate.
28.04	Explain the process of evaluating ECG tracings to determine the presence of dysrhythmias.
28.05	List indications for pacemaker insertion, pacemaker modalities.
28.06	Recognize normal pacemaker rhythms and malfunctions such as pacemaker failure to fire, failure to capture, over-sensing, and under-sensing.
28.07	Recognize sinus rhythms including sinus bradycardia, sinus tachycardia, sinus arrhythmia, and sinus pause.
28.08	Recognize atrial dysrhythmias including atrial tachycardia, atrial fibrillation, atrial flutter, and atrial ectopic beats.
28.09	Recognize junctional dysrhythmias including junctional rhythm, accelerated junctional, junctional tachycardia, and junctional ectopic beats.
28.10	Recognize supra ventricular tachycardia.
28.11	Identify all Heart Blocks including 1 <sup>st</sup> Degree, 2 <sup>nd</sup> Degree Type I, 2 <sup>nd</sup> Degree Type II, Third Degree, and Bundle Branch Blocks.
28.12	Recognize all lethal cardiac dysrhythmias including Ventricular Tachycardia, Ventricular Fibrillation, and Asystole.
28.13	Recognize ECG changes that indicate the presence of myocardial ischemia or infarction.
28.14	Explain the importance of notifying the nurse immediately when ischemic or infarct ECG changes are identified.
28.15	Identify ECG wave morphology that indicate atrial or ventricular hypertrophies.
28.16	Recognize ECG changes that indicate premature atrial, junctional, and ventricular complexes and other rare phenomena.
29.0	Describe common cardiovascular drugs, their actions, use and adverse effects. -- The student will be able to:
29.01	List common cardiovascular drugs and their common adverse effects including ECG changes if applicable.
29.02	Identify and observe a cardiac emergency.
30.0	Set up telemetry monitoring, interpret and report abnormal rhythms to the nurse. – The student will be able to:
30.01	Apply and turn on telemetry unit and set alarm parameters according to facility policy.
30.02	Identify lethal arrhythmias and actions required.
30.03	Enter and maintain patient identity and location while in telemetry according to patient reconciliation procedures.
30.04	Identify the PRI, QRS, QTI, T waves, and heart rate.
31.0	Monitoring, interpreting and reporting abnormal rhythms (dysrhythmias) to the nurse. – The student will be able to:

31.01	Oversee cardiac rhythms for dysrhythmias and report to the nurse.
31.02	Examine rhythm strips for clarity and artifact. Record and documents heart rhythm strips per unit policy.
31.03	Identify three types of artifacts and initiates actions to correct them.
31.04	Replace electrodes and apply lead wires using the correct landmarks.
31.05	Records rhythm and documents time of events during cardiac arrest situations, cardioversion procedures, and emergency medication administration as directed by the nurse.
31.06	Maintain constant communication with the nurse during patient emergency situations.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Transcription of physicians' orders is an integral part of this course. This competency is achieved through simulated practice with standard equipment and supplies used in a health care facility by the health unit coordinator. An overview of anatomy and physiology serves as a foundation for medical terminology and CPR/first aid. A working knowledge of the computer is a competency achieved through actual practice. Role playing is one of the methods which can be used for developing interpersonal skills.

### **Supervised clinical experience is an integral part of this program.**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

It is recommended that completers of this program take the National Association of Health Unit Coordinators Certification examination which is offered annually.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the appropriate career and technical student organization for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Dental Laboratory Technology  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170108
CIP Number	0351060306
Grade Level	30, 31
Standard Length	2040 Hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	51-9081 Dental Laboratory Technicians 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 9 Reading: 9

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for entry level employment as dental laboratory technicians SOC code 51-9081, denture technicians crown & bridge technicians, ceramic & technicians or to provide supplemental training for persons previously or currently employed in this occupation.

The content of the program includes, but is not limited to, general studies, physical sciences, dental sciences, and dental laboratory techniques.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 6 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the post-secondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	DTE0400	Orientation to Dental Laboratory Technology	DEN LABTEC 7G	18 hours	31-9099
B	DTE0433	Denture Technician 1		319 hours	51-9081
	DTE0434	Denture Technician 2		319 hours	51-9081
C	DTE0435	Advanced Denture Technician		349 hours	51-9081
D	DTE0441	Crown And Bridge Technician		285 hours	51-9081
E	DTE0461	Ceramic Technician		285 hours	51-9081
F	DTE0451	Implant, Attachment & Hybrid Restoration Technician		285 hours	51-9081
G	DTE0481	Master Dental Laboratory Technician		180 hours	51-9081

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.



## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Identify the anatomic structure and function of body systems in relation to prosthetic services performed by the dental laboratory technician.
- 02.0 Practice quality assurance, safety and infection control.
- 03.0 Adhere to legal and ethical principles related to the practice of dental laboratory technology.
- 04.0 Demonstrate knowledge of effective business management techniques.
- 05.0 Demonstrate knowledge of dental sciences.
- 06.0 Demonstrate knowledge of physical and mechanical properties of metals and alloys.
- 07.0 Manufacture various methods of complete denture construction.
- 08.0 Manufacture complete denture construction on practical work received from dental clinic.
- 09.0 Manufacture and identify components of a removable partial denture.
- 10.0 Manufacture orthodontic and pedodontic appliances.
- 11.0 Demonstrate knowledge and skills required to manufacture single and multi-unit restorations.
- 12.0 Perform basic occlusion, determinants of occlusal morphology and physiology of mandibular movements.
- 13.0 Manufacture restorations in the student's specialty for patients who receive treatment at the dental research clinic.
- 14.0 Demonstrate knowledge of basic concepts of porcelain-fused-to-metal (PFM) techniques.
- 15.0 Demonstrate proper design and fabrication for individual and three-unit anterior bridge for pressable system restorations.
- 16.0 Demonstrate proper design and fabrication for all Ceramics Restorations using Refractory System.
- 17.0 Demonstrated knowledge of the Standard Components for Implant Systems.
- 18.0 Demonstrate proper design and fabrication for Implants System.
- 19.0 Describe the Standard Components and fabrication of semi precision attachments.
- 20.0 Demonstrate proper design and fabrication of Hybrid Restoration.
- 21.0 Specialization Removable Appliances: Demonstrate their skills in removable dentures on specific projects.
- 22.0 Perform select proficiency in fixed restorative techniques in chosen areas of specialization.

Florida Department of Education  
Student Performance Standards

Program Title: Dental Laboratory Technology  
Career Certificate Program Number: H170108

<b>Course Number: DTE0400</b>	
<b>Occupational Completion Point: A</b>	
<b>Orientation to Dental Laboratory Technology – 18 Hours – SOC Code 31-9099</b>	
01.0	Identify the anatomic structure and function of body systems in relation to prosthetic services performed by the dental laboratory technician. -- The student will be able to:
01.01	Identify structures and functions of head and neck anatomy.
01.02	Identify embryonic development of head, oral cavity and individual teeth.
01.03	Identify each tooth and its landmarks.
02.0	Practice quality assurance, safety, and infection control. -- The student will be able to:
02.01	Practice safety in accordance with institutional policy.
02.02	Identify documentation procedures necessary to comply with state laws.
02.03	Demonstrate knowledge of the dental laboratory technician’s role in providing quality assurance in laboratory procedures, reporting, and use and maintenance of equipment.
02.04	Use appropriate dental terminology and abbreviations.
02.05	Demonstrate knowledge, principles, and methods of disease transmission and prevention as related to dental prostheses.
02.06	Demonstrate knowledge of infection control in dental laboratories in accordance with Center for Disease Control (CDC)/OSHA guidelines.
02.07	Establish an infection control procedures policy for the dental laboratory.
03.0	Adhere to legal and ethical principles related to the practice of dental laboratory technology. -- The student will be able to:
03.01	Demonstrate knowledge of the importance of observing the doctor/technician relationship.
03.02	Demonstrate knowledge of state law governing the practice of Dental Laboratory Technology.
04.0	Demonstrate knowledge of effective business management techniques. -- The student will be able to:
04.01	Demonstrate knowledge and use of an office/laboratory procedure manual.

04.02	Demonstrate knowledge and use of business finance and operating expenses.
04.03	Demonstrate knowledge of pay scale and benefit program for employees and a bookkeeping system.
04.04	Demonstrate knowledge of tax forms, payroll records, insurance needs and inventory needs.
04.05	Demonstrate knowledge of employee hiring orientation.
04.06	Demonstrate knowledge of computer applications in the dental laboratory.
<b>Course Number: DTE0433</b>	
<b>Occupational Completion Point: B</b>	
<b>Denture Technician 1 – 319 Hours – SOC Code 51-9081</b>	
05.0	Demonstrate knowledge of dental sciences. -- The student will be able to:
05.01	Demonstrate knowledge of physical properties, use and manipulation of dental materials.
05.02	Demonstrate knowledge of the dynamics of occlusion.
05.03	Demonstrate problem-solving skills as related to dental materials.
06.0	Demonstrate knowledge of physical and mechanical properties of metals and alloys. -- The student will be able to:
06.01	Identify how dental materials are affected by changes in the physical and mechanical properties of the materials.
06.02	List characteristics of a metal.
06.03	Identify the mechanical properties of cast alloys and cold worked metal, strain hardening, recrystallization, and grain growth.
06.04	Identify the metals and percentages in all types of dental casting gold alloys and how different alloys of dental gold casting affect the dental restorations.
06.05	Identify heat treatment techniques for dental casting gold alloys.
06.06	List the types, composition and uses of dental solders.
06.07	Identify composition and uses of dental fluxes and pickling agents.
06.08	Identify composition, physical and mechanical properties and heat treatment techniques for base metal alloys, chrome cobalt and nickel chrome.
06.09	Identify types of burs used in dentistry and the mechanics of cutting.
06.10	Identify abrasion and polishing dentifrices used in the dental lab and how each affects the dental restoration.

**Course Number: DTE0434**  
**Occupational Completion Point: B**  
**Denture Technician 2 – 319 Hours – SOC Code 51-9081**

07.0	Manufacture various methods of complete denture construction. -- The student will be able to:
07.01	Make casts by pouring all types of impression material to include dentulous and edentulous impressions.
07.02	Construct base plates by either the light cure and/ or thermoforming vacuum press.
07.03	Construct wax occlusion rims to exact specifications.
07.04	Articulate cast upon which complete dentures are to be made on 1 plain line and semi adjustable articulators.
07.05	Set-up and wax-up complete upper and lower dentures.
07.06	Manufacture temporary all-acrylic removable partial dentures.
07.07	Repair any and all types of dentures.
07.08	Manufacture immediate complete dentures complete with surgical tray.
07.09	Relining complete dentures (upper and lower).
07.10	Perform selective milling grinding in the finishing of complete dentures.
08.0	Manufacture complete denture construction on practical work received from dental clinic. -- The student will be able to:
08.01	Make stone or plaster casts by pouring all types of impressions, both dentulous and semi-edentulous impressions, be it alginate, rubber base or silicone.
08.02	Construct a light cure or thermoformed vacuum base plate and stabilized tray if so ordered on the prescription by the doctor.
08.03	Construct wax occlusal rim to exact measurements.
08.04	Be able to articulate casts on a plain line or semi-adjustable articulator.
08.05	Set-up and wax-up cases.
08.06	Invest, pack, cure, deflask, finish, and polish.
08.07	Repair dentures, flange, adding teeth, or clasp if needed to denture.
08.08	Reline any upper or lower denture.

**Course Number: DTE0435**  
**Occupational Completion Point: C**  
**Advanced Denture Technician – 349 Hours – SOC Code 51-9081**

09.0 Manufacture and identify components of a removable partial denture. -- The student will be able to:

09.01 Survey and design maxillary and mandibular removable partial denture framework.

09.02 Block out and duplicate master cast.

09.03 Identify, explain, and use a variety of clasps.

09.04 Wax-up, sprue, invest, burnout and cast non-precious alloy frames.

09.05 Finish and polish metal frames and arrange artificial teeth.

09.06 Demonstrate the bending of wrought wire and perform various repairs.

10.0 Manufacture orthodontic and pedodontic appliances. -- The student will be able to:

10.01 Identify and describe various types of malocclusion as presented in the course.

10.02 Identify and know the treatment objectives of the orthodontic appliances presented in the course.

10.03 Interpret work authorization for orthodontic appliances.

10.04 Complete the assigned laboratory exercises in the course to the standard of clinically acceptable quality.

**Course Number: DTE0441**  
**Occupational Completion Point: D**  
**Crown And Bridge Technician – 285 Hours – SOC Code 51-9081**

11.0 Demonstrate knowledge and skills required to manufacture single and multi-unit restorations. -- The student will be able to:

11.01 Pour impression to make casts with removable dies.

11.02 Articulate casts on a semi-adjustable articulator and use various types of articulation systems.

11.03 Prepare dies for waxing.

11.04 Manufacture wax patterns for inlays, onlays, full crowns, and multi-unit restorations.

11.05 Demonstrate proper techniques in spruing, investing, and casting.

11.06 Finish all metal cast restorations.

11.07 Demonstrate a proper diagnostic wax-up for single and multi-unit restorations.

11.08	Demonstrate the fabrication of provisional restoration using thermoforming vacuum or putty matrix methods.
11.09	Construct a single and multi-unit restoration.
11.10	Finish provisional restoration in an acceptable manner.
11.11	Construct a post and core with a final restoration.
12.0	Perform basic occlusion, determinants of occlusal morphology and physiology of mandibular movements. -- The student will be able to:
12.01	Identify fundamental occlusion patterning associated with the basic mandibular positions.
12.02	Identify Dr. Angle's occlusal classifications.
12.03	Identify cusp types from the functional point of view.
12.04	Identify the incisal edges and cusps tips of maxillary teeth to mandibular teeth in centric occlusion.
12.05	Demonstrate the correlation between maxillary and mandibular cusps.
12.06	Demonstrate an understanding of mandibular movements.
12.07	Demonstrate an understanding of functional occlusion.
13.0	Manufacture restorations in the student's specialty for patients who receive treatment at the dental research clinic. -- The student will be able to:
13.01	Complete denture set-up, wax-up, and finish.
13.02	Perform basic complete denture relines.
13.03	Demonstrate knowledge of denture repairs.
13.04	Removable partial denture wax-up, casting and finish.
13.05	Manufacture a Hawley appliance.
13.06	Manufacture space maintainer.
13.07	Fabricate restorations to include: inlay, onlays, full crowns, bridges Porcelain Fused to Metal (PFM), and all ceramic restorations.
13.08	Manufacture prostheses for patients currently under treatment or from actual casts or impressions and occlusal records from previously fabricated prosthesis.

**Course Number: DTE0461**  
**Occupational Completion Point: E**  
**Ceramic Technician – 285 Hours – SOC Code 51-9081**

14.0	Demonstrate knowledge of basic concepts of porcelain-fused-to-metal (PFM) techniques. -- The student will be able to:
14.01	Describe the components of dental porcelain.
14.02	Describe the early porcelain-fused-to-metal systems.
14.03	Identify various alloys used in the fabrication of PFM restorations.
14.04	Identify and explain the uses of opaque, body, incisal, modifier, glaze, and stain porcelains.
14.05	Demonstrate proper metal design for individual and multiple-unit PFM restorations.
14.06	Demonstrate proper spruing, investing, burnout, casting and metal finishing techniques.
14.07	Demonstrate proper and accurate pre-soldering skills.
14.08	Demonstrate proper and accurate post-soldering skills.
14.09	Describe the concept of degassing and metal porcelain bonding.
14.10	Demonstrate approved techniques for opaque, body and incisal porcelain application.
14.11	Identify various porcelain firing cycles.
14.12	Demonstrate approved techniques for contouring and glazing porcelain.
14.13	Describe the basic concepts of staining, the color wheel and hue, chroma and value.
14.14	Demonstrate and understanding of porcelain furnace calibration and maintenance.
15.0	Demonstrate proper design and fabrication for individual and three-unit anterior bridge for pressable system restorations. -- The student will be able to:
15.01	Demonstrate proper wax-up, spruing and investing.
15.02	Demonstrate proper burnout and pressing.
15.03	Demonstrate proper recovery/divesting of a pressed crown and bridge.
15.04	Demonstrate proper finishing techniques of a pressed crown and bridge.
16.0	Demonstrate proper design and fabrication for all Ceramics Restorations using Refractory System. -- The student will be able to:
16.01	Pour impression to make casts with removable dies.

16.02 Fabrication of inlays, onlays and veneers using the Refractory System.

**Course Number: DTE0451**

**Occupational Completion Point: F**

**Implant, Attachment & Hybrid Restoration Technician – 285 Hours – SOC Code 51-9081**

17.0 Demonstrated knowledge of the Standard Components for Implant Systems. -- The student will be able to:

17.01 List the standard components of an implant system including:

- 17.01.1 Implant / fixture
- 17.01.2 Healing Abutment Cover Screw/ Screw
- 17.01.3 Abutment
- 17.01.4 Temporary Components
- 17.01.5 Angulated Abutment
- 17.01.6 Impression Coping
- 17.01.7 Open tray/closed tray
- 17.01.8 Abutment replicas
- 17.01.9 Analogue/ Implant Replica

18.0 Demonstrate proper design and fabrication for Implants System. --The student will be able to:

18.01 Demonstrate the fabrication of a Custom Tray for an Implant Case.

18.02 Demonstrate the fabrication of a Surgical Guide Template.

18.03 Demonstrate the pouring of an impression and fabricate a master cast with an abutment replica in place.

18.04 Apply soft tissue silicone material around the abutment replica.

18.05 Screw/Cement-Retained, castable substructure.

18.06 Demonstrate proper substructure design: waxing, spruing, investing, burnout, casting and metal finishing techniques for Implant Systems.

18.07 Demonstrate proper design and fabrication of a porcelain fused to metal crown over an implant abutment.

18.08 Demonstrate approved techniques for opaque, body and incisal porcelain application for Implant Systems.

19.0 Describe the Standard Components and fabrication of semi precision attachments. -- The student will be able to:

19.01 Explain the uses of attachments and stress breakers.

19.02 Define and explain basic attachments groups and impression needed.

19.03 Attachment Selection.



19.04	Demonstrate proper design and fabrication of a Semi Precision Attachment.
19.05	Explain the advantages and disadvantages of attachments.
19.06	Semi Precision Attachments versus Precision Attachments.
20.0	Demonstrate proper design and fabrication of Hybrid Restoration. -- The student will be able to:
20.01	Fabricate a Bar and Clip Retained Overdenture.
20.02	Fabricate Custom Tray and Master Cast.
20.03	Fabricate Baseplate and Occlusion Rims.
20.04	Articulation and Trial Denture.
20.05	Fabricate a Bar.
20.06	Demonstrate proper design and fabrication of a Denture over Implants with a Bar.
<b>Course Number: DTE0481</b>	
<b>Occupational Completion Point: G</b>	
<b>Master Dental Laboratory Technician – 180 Hours – SOC Code 51-9081</b>	
21.0	Specialization Removable Appliances: Demonstrate their skills in removable dentures on specific projects. -- The student will be able to:
21.01	Survey and design a maxillary and mandibular removable partial denture.
21.02	Identify and explain the use of wax in a wide variety of clasps.
21.03	Duplicate master casts.
21.04	Sprue and invest waxed partial denture castings.
21.05	Finish and polish a removable partial denture casting.
22.0	Perform select proficiency in fixed restorative techniques in chosen areas of specialization. -- The student will be able to:
22.01	Manufacture fixed restorations more quickly and with increased skill.
22.02	Demonstrate a thorough understanding of the procedures involved in the fabrication of fixed restorations.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Laboratory activities are integrated with the didactic portion of this program. Students perform representative tasks in the manufacture of custom made dental devices and become involved in the dental health team through first hand observation in clinical procedures as they relate to laboratory techniques.

### **Special Notes**

Reinforcement of basic skills in English, mathematics and science appropriate for the job preparatory programs occurs through vocational classroom instruction and applied laboratory procedures or practice.

The program should meet the requirements of the Commission on Dental Accreditation of the American Dental Association. Students should be prepared to take the recognized graduate examination offered by the National Board for Certification in Dental Laboratory technology, Inc.

Dental Laboratory Technicians will complete the certificate program and be prepared to take the recognized graduate examination offered by the National Board of Certificate for Dental Laboratory Technicians.

The standard length of the program is 2040 clock hours.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 9, and Reading 9. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Hemodialysis Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170207
CIP Number	0351101100
Grade Level	30, 31
Standard Length	600 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2099 Health Technologists and Technicians, All Other 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, renal health-illness concepts, hemodialysis skills, emergency procedures including CPR and first aid, safety and security procedures, medical terminology, anatomy and physiology, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G HEMO TEC 7 G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	90 hours	31-9099
B	MLT0368	Dialysis Technician 1		255 hours	29-2099
	MLT0369	Dialysis Technician 2		255 hours	

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills specific to the dialysis setting.
- 13.0 Identify normal and abnormal anatomic structure and function of body systems in relation to services performed by a Hemodialysis Technician.
- 14.0 Practice infection control following universal precautions.
- 15.0 Recognize and demonstrate knowledge of how to utilize equipment and supplies specific to dialysis.
- 16.0 Demonstrate skills and knowledge necessary to perform dialysis technician duties.
- 17.0 Practice accepted procedures of transporting specimens.
- 18.0 Practice quality assurance and safety.
- 19.0 Demonstrate emergency planning and response.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Hemodialysis Technician  
Career Certificate Program Number: H17207**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**PSAV Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Course Number: MLT0368 Occupational Completion Point: B Dialysis Technician 1 – 255 Hours – SOC Code 29-2099</b>	
12.0	Demonstrate accepted professional, communication, and interpersonal skills specific to the dialysis setting. – The student will be able to:
12.01	Demonstrate knowledge of correct medical terminology related to dialysis.
12.02	Demonstrate ability to work as a member of the hemodialysis team.
12.03	Demonstrate knowledge of various professional organizations related to hemodialysis.
12.04	Recognize the importance of continuing education and renewal of certification.
12.05	Recognize and respond appropriately to request from or to other departments or health care team members.
12.06	Describe the role of other health team members who interact with the dialysis team.
13.0	Identify normal and abnormal anatomic structure and function of body systems in relation to services performed by a hemodialysis technician. – The student will be able to:
13.01	Demonstrate knowledge of basic structure of the kidney.
13.02	Demonstrate knowledge of basic physiology of the kidney including but not limited to filtration, diffusion, osmosis, and electrolyte interchange.



13.03	Recognize function of endocrine system as related to the kidney.
13.04	Describe interaction of other body systems related to dialysis.
13.05	Discuss diseases, including diagnosis, treatment, and signs and symptoms, which may lead to kidney failure and need for dialysis.
14.0	Practice infection control following standard precautions. – The student will be able to:
14.01	Demonstrate knowledge of how (when) to utilize personal protection equipment (PPE).
14.02	Demonstrate ability to recognize biohazardous waste storage and disposal, including, but not limited to isolation room waste.
14.03	Follow standard precautions, clean techniques and OSHA regulations appropriately
14.04	Label biohazardous waste correctly including date and location.
15.0	Recognize and demonstrate knowledge of how to utilize equipment and supplies specific to dialysis. – The student will be able to:
15.01	Demonstrate use of water quality instrumentation including, but not limited to pH meter, conductivity meter and chloramine meter.
15.02	Recognize supplies needed to conduct the hemodialysis treatment.
15.03	Demonstrate ability to conduct daily inventory of hemodialysis supplies including, but not limited to dialysis, blood lines, and sodium chloride.
15.04	Recognize necessity of keeping areas stocked for each staff.
<b>Course Number: MLT0369</b>	
<b>Occupational Completion Point: B</b>	
<b>Dialysis Technician 2 – 255 Hours – SOC Code 29-2099</b>	
16.0	Demonstrate skills and knowledge necessary to perform dialysis technician duties. – The student will be able to:
16.01	Demonstrate accurate documentation, machine trouble-shooting, and follow-up of whole patient hemodialysis treatment.
16.02	Recognize any visual changes in patient's behavior, hemodialysis machines and water room.
16.03	Demonstrate knowledge of the purpose of water softeners, carbon tank, reverse osmosis, and deionization, follow the monitoring guidelines for water purification equipment, distribution Systems and dialysate.
16.04	Demonstrate ability to cannulate, assess and confirm blood flow direction in patient's access; including, but not limited to signs of infection and patency.
17.0	Practice accepted procedures of transporting specimens. – The student will be able to:
17.01	Collect blood specimens utilizing correct drawing techniques, refrigeration, packing, and transportation.
17.02	Follow laboratory's policy and procedures (P and P) from collection of specimens to separation of blood form elements.

18.0	Practice quality assurance and safety. – The student will be able to:
18.01	Demonstrate how to follow-up physician's medical orders, including, but not limited to treatment length, blood flow rates, dialysis type and concentration.
18.02	Assist with maintenance of appropriate aseptic techniques (clean and/or sterile) during cannulation.
18.03	Recognize patient's target weight (TW) importance, and maximum ultra-filtration rate possible.
18.04	Describe patient's probable prognosis when dry weight is not reached.
18.05	Demonstrate patient safety practices as related to permanent monitor patient - machine.
18.06	Identify appropriate procedures and protocols to manage and correct common complications, including but not limited to, intradialytic hypotension, air embolisms, exsanguination (mass blood loss) and hemolysis.
19.0	Demonstrate emergency planning and response. – The students will be able to:
19.01	Demonstrate ability to follow the steps of emergency preparedness, including regulations, oversights and threat levels.
19.02	Demonstrate the ability to perform rapid and safe patient disconnection in the event of an emergency situation.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Hands on clinical experience should be provided as part of the program of study. Refer to specific certification exam eligibility requirements in relation to clinical experience.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

State or Industry certification examinations are now part of the Centers of Medicare and Medicaid Services' (CMS) requirements and are available through several state and independent professional certification agencies:

Nephrology Nursing Certification Commission (NNCC) <http://www.nncc-exam.org>

The Board of Nephrology Examiners Nursing and Technology (BONENT) <http://www.bonent.org/examinations/cht.html>

Outcomes 01-11 are referred to as the Health Career Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**        **Electrocardiograph Technology**  
**Program Type:**       **Career Preparatory**  
**Career Cluster:**      **Health Science**

**Career Certificate Program**

Program Number	H170208
CIP Number	0351090203
Grade Level	30, 31
Standard Length	465 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2031 Cardiovascular Technologists and Technicians 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics:        9 Language:           9 Reading:             9

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as electrocardiograph aides, electrocardiograph technicians, EKG Technicians SOC 29-2031 cardiovascular technologists and technicians or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to communication and interpersonal skills, overview of human anatomy and physiology with emphasis on cardiac and vascular systems, medical terminology and transcription, patient care techniques, medical instrumentation, cardiovascular drugs, interpretation of monitoring and testing results, medical ethics, cardiac wellness and rehabilitation, safe and efficient work practices, CPR, Basic Life Support (BLS) and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	LAB TECH @7 7G EKG 7 G REG NURSE 7 G RESP THER @7 7G PARAMEDIC @7 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	90 hours	31-9099
B	MEA0540	EKG Aide		75 hours	31-9099
C	MEA0541	EKG Technician		300 hours	29-2031

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Describe the cardiovascular system.
- 13.0 Identify legal and ethical responsibilities of an EKG aide.
- 14.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 15.0 Perform patient care techniques in the health care facility.
- 16.0 Recognize normal and abnormal monitoring and testing results.
- 17.0 Describe cardiovascular drugs, their actions, use, and adverse effects.
- 18.0 Demonstrate knowledge of other cardiovascular diagnostic modalities.



**Florida Department of Education  
Student Performance Standards**

**Program Title: Electrocardiograph Technology  
Career Certificate Program Number: H170208**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Course Number: MEA0540 Occupational Completion Point: B EKG Aide – 75 Hours – SOC Code 31-9099</b>	
<b>12.0</b>	Describe the cardiovascular system. -- The student will be able to:
12.01	Locate the heart and surrounding structures.
12.02	Diagram and label the parts of the heart and list the functions of each labeled part.
12.03	Trace the flow of blood through the cardiopulmonary system.
12.04	Identify and describe the electrical conduction system.
12.05	Describe the function of the autonomic nervous system.
12.06	Describe signs and symptoms of a patient demonstrating poor perfusion or low cardiac output and state the importance of rapid reporting.
<b>13.0</b>	Identify legal and ethical responsibilities of an EKG aide. -- The student will be able to:
13.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
13.02	Maintain a safe and efficient work environment.
13.03	Maintain EKG equipment so it will be safe and accurate.

13.04	Implement appropriate Joint Commission patient safety goals and adhere to HIPAA regulations regarding protected health information (PHI).
14.0	Demonstrate knowledge of, apply, and use medical instrumentation modalities. -- The student will be able to:
14.01	Calibrate and maintain EKG equipment in the work environment.
14.02	Identify three types of lead systems (standard/limb, augmented, and precordial/chest).
14.03	State Einthoven's triangle.
14.04	Demonstrate proper lead placement including lead placement with special considerations for various patients with special needs to include pediatric, amputees, and posterior and right sided EKGs.
14.05	Identify artifacts and mechanical problems.
14.06	Perform a 3, 5, and 12 lead EKG.
14.07	Recognize normal sinus rhythm.
14.08	Report dysrhythmias that are not normal sinus rhythm.
14.09	Recognize signs and symptoms of cardiopulmonary compromise on the EKG tracing and understand the importance of rapid reporting. .
14.10	Verify accuracy of lead placement on the EKG.
14.11	Verify settings on the EKG machine such as paper speed, sensitivity (gain), and Hertz (Hz) prior to use.
15.0	Perform patient care techniques in the health care facility. -- The student will be able to:
15.01	Describe the physical and mental preparation of the patient for EKG testing.
15.02	Identify patient and verify the requisition order.
15.03	Prepare patient for cardiovascular diagnostic testing.
15.04	Obtain patient's vitals (temperature, pulse, respirations, blood pressure, and pulse oximetry) in preparation for cardiovascular diagnostic testing and report abnormalities.
15.05	State precautions required when performing cardiovascular diagnostic procedures.
15.06	Convey the importance of maintaining a safe patient environment and evaluate potential hazards in the work environment.

**Course Number: MEA0541**  
**Occupational Completion Point: C**  
**EKG Technician – 300 Hours – SOC Code 29-2031**

16.0	Recognize normal and abnormal monitoring and testing results. -- The student will be able to:
16.01	Inspect and measure the various waveforms of a cardiac cycle including segments, complexes, heart rates and intervals.
16.02	Identify electrical axis.
16.03	Recognize pacemaker spikes on the EKG and state the purpose of pacemakers.
16.04	Recognize normal and deviations from normal sinus rhythms.
16.05	Recognize all atrial rhythms.
16.06	Recognize all junctional rhythms.
16.07	Recognize all ventricular rhythms.
16.08	Recognize all types of heart blocks.
16.09	Recognize normal and deviations from single chamber and dual chamber pacemakers, as well as all implantable cardioverter defibrillators.
16.10	Identify myocardial ischemia, injury, and infarction on EKG tracing.
16.11	Recognize atrial and ventricular hypertrophies.
16.12	Recognize ectopic beats and any rare phenomena.
16.13	Recognize normal and deviations from normal 12 lead EKG results.
16.14	Describe potential patient responses to all dysrhythmias and other EKG abnormalities.
16.15	Recognize and respond promptly to life threatening dysrhythmias during continuous monitoring such as telemetry.
17.0	Describe cardiovascular drugs, their actions, use and adverse effects. -- The student will be able to:
17.01	Describe the mechanisms by which common cardiovascular drugs work including actions and adverse effects.
17.02	Differentiate between normal and abnormal EKG changes potentially due to drugs.
18.0	Demonstrate knowledge of other cardiovascular diagnostic modalities. -- The student will be able to:
18.01	Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.
18.02	Demonstrate the procedures for preparing the patient for stress testing/scanning exercise treatment and provide patient education.

18.03 Understand and demonstrate patient documentation for all types of monitoring.

18.04 Describe other modalities of cardiovascular diagnosis and interpretation.

18.05 Maintain patient cardiac alarm policy at all times as per acceptable facility guidelines.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This cluster of programs focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Students must complete the core, or demonstrate the mastery of skills standards contained in the core, before advancing in the program.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

A voluntary national certification is available through an exam offered by the National Health Career Association, 194 Rt. 46 East, Fairfield, NJ 07004 (973/244-0023). To be eligible students must;

1. Have a High School Diploma or equivalency and have completed an NHA approved training program.
- OR
2. Have a High School Diploma or equivalency and have worked in the field for a minimum of one year.

Outcomes 01-11 are referred to as the Health Career Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio. The Core should be taken first or concurrently with the first course in the program.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student. Access MyCareerShines by visiting: [www.mycareershines.org](http://www.mycareershines.org).

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 9, and Reading 9. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Surgical Technology  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170211
CIP Number	0351090905
Grade Level	30, 31
Standard Length	1330 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 10 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment as surgical technologists (SOC 29-2055). Selected portions of this program may be utilized to provide additional skills to enable nursing graduates to become employable in operating rooms as surgical technologists.

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical technology procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, and basic computer literacy.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	OPR RM TEC @7 7G	90 hours	31-9099
B	STS0015	Central Supply Technician	REG NURSE 7 G	210 hours	31-9099
C	STS0010	Surgical Technologist 1	OPR REG NURSE 7 G	343 hours	29-2055
	STS0011	Surgical Technologist 2	SURG TECH 7 G	343 hours	
	STS0012	Surgical Technologist 3	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	344 hours	



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate central supply skills.
- 13.0 Use communication and interpersonal skills as related to surgical technology.
- 14.0 Demonstrate an understanding of the basic sciences related to surgical technology.
- 15.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.
- 16.0 Describe and practice safety measures in the surgical environment.
- 17.0 Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs.
- 18.0 Demonstrate knowledge of the skills necessary to function safely and effectively.
- 19.0 Demonstrate knowledge of and assist with surgical procedures.
- 20.0 Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Surgical Technology**  
**Career Certificate Program Number: H170211**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003**  
**Occupational Completion Point: A**  
**Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: STS0015**  
**Occupational Completion Point: B**  
**Central Supply Technician – 210 Hours – SOC Code 31-9099**

<b>12.0</b>	<b>Demonstrate central supply skills. – The student will be able to:</b>
12.01	Apply the principles of medical/surgical asepsis including attire, environmental control and traffic patterns to control and manage dirty, clean and sterile areas of the operating room and central supply.
12.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
12.03	Inspect and send out for repair instruments, equipment and supplies regarding condition and quantity.
12.04	Describe the methods of disinfection and sterilization.
12.05	Demonstrate the handling, inspection and notification process regarding package integrity.
12.06	Demonstrate correctly decontamination techniques for instruments, equipment, and the environment used for surgical procedures.
12.07	Describe clean and sterile transportation, restocking, and storage principles for instruments, supplies and equipment.
12.08	Identify instruments, supplies and equipment for any surgical procedure.
12.09	Describe various supply distribution and inventory control methods.
12.10	Demonstrate ability to prepare and label items for high level disinfection and sterilization correctly.

12.11 Demonstrate the techniques of high level disinfection and sterilization for immediate use items.

12.12 Demonstrate case cart preparation and management.

**Course Number: STS0010**

**Occupational Completion Point: C**

**Surgical Technologist 1 – 343 Hours – SOC Code 29-2055**

13.0 Use communication and interpersonal skills as related to surgical technology. – The student will be able to:

13.01 Describe various forms of communication in the role of surgical technologist.

13.02 Analyze and select the appropriate behavioral response unique to the patient's needs.

13.03 Describe the concepts of conflict resolution, assertive behavior and the principles of teamwork in the surgical environment.

14.0 Demonstrate an understanding of the basic sciences related to surgical technology. – The student will be able to:

14.01 Describe the concepts of microbiology and relate key principles to the surgical environment.

14.02 Compare and contrast the structure and characteristics of microorganisms found in the surgical environment.

14.03 Relate medical terminology, medical abbreviations, and anatomy and physiology to surgical specialties and specific procedures.

14.04 Analyze patient defense mechanisms, the chain of infection and the infectious process as related to surgical practice.

14.05 Demonstrate infection and disease transmission control techniques following the Center for Disease Control (CDC) and Occupational Safety and Health Administration (OSHA) guidelines for surgery.

14.06 Correlate wound classifications and wound healing principles with wound management guidelines.

14.07 Discuss the principles of information technology, electricity and robotics as they relate to surgery.

15.0 Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment. -- The student will be able to:

15.01 Describe the roles of the anesthesia provider and circulating nurse.

15.02 Analyze the administration of anesthesia including the methods, agents, and techniques.

15.03 Describe the preoperative examination and preparation process for both surgery and anesthesia.

15.04 Describe potential anesthesia and operative complications and interventions for each.

15.05 Define the terminology and describe the basic concepts of pharmacology including pharmacokinetics and pharmacodynamics.

15.06 Identify the classifications, actions, effects and precautions for common drugs used at the sterile field and within the surgical

environment.
15.07 Demonstrate the application of the six rights of medication administration.
15.08 Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.
15.09 Demonstrate the appropriate methods of transferring and accepting medications onto the sterile field.
15.10 Prepare, manage and label sterile solutions and medications accurately within the sterile field.
15.11 Correctly calculate common medication conversions and dosages.
15.12 Demonstrate preparation and passing of medication mixtures using ratio and proportions correctly. .
15.13 Maintains an accurate account of the amount of each medication and/or solution used at the field and notifies circulator as appropriate to the situation to ensure accurate documentation.
16.0 Describe and practice safety measures in the surgical environment. – The student will be able to:
16.01 Describe the role, job duties and responsibilities of the surgical technologist in the healthcare setting.
16.02 Inspect emergency equipment and supplies for condition and quantity.
16.03 Demonstrate appropriate safety measures to prevent operating room fires and electrical shock from equipment.
16.04 Describe appropriate safety measures for laser and electrosurgical unit usage in surgery.
16.05 Implement appropriate regulatory and accreditation agency patient safety guidelines.
16.06 Describe the role of the surgical technologist in a disaster situation.
16.07 Describe the role of the surgical technologist in an emergency patient situation.
16.08 Prepare the operative site.
16.09 Perform steps for Foley catheter insertion and connecting to drainage correctly.

**Course Number: STS0011**  
**Occupational Completion Point: C**  
**Surgical Technologist 2 – 343 Hours – SOC Code 29-2055**

17.0 Assist the RN circulator with patient care procedures related to the surgical environment and describe methods for meeting patient's needs.  
– The student will be able to:

17.01 Perform patient transfer/transportation techniques used in the operating room.

17.02 Assist with positioning and apply safety devices to the patient for surgery.

17.03 Ground patient and connect electrosurgical cautery unit.

17.04 Describe the roles of anesthetist and circulating nurse during induction.

17.05 Prepare the operative site.

17.06 Perform steps for Foley catheter insertion and connecting to drainage.

17.07 Apply sterile dressing and bandage.

18.0 Demonstrate knowledge of the skills necessary to function safely and effectively. – The student will be able to:

18.01 Select and verify instruments, equipment and supplies, including any implants needed for surgical procedures using surgeon preference/procedure cards including those identified as “have available/hold items”.

18.02 Measure and pour sterile solutions.

18.03 Perform surgical scrub.

18.04 Put on sterile gown and gloves.

18.05 Drape tables and solution stands.

18.06 Set up sterile mayo stand and instrument table.

18.07 Prepare sutures, ligatures, and ties.

18.08 Prepare, pass, and monitor amount given for medications used on the sterile field.

18.09 Assist surgeon in gowning and gloving.

18.10 Assist in draping patient, pass instruments, monitor field.

18.11 Identify/correct and/or report breaks in aseptic technique.

18.12 Monitor body fluids, e.g. blood loss, ascites.

18.13	Perform complete counts with R.N.
18.14	Identify principles and demonstrate techniques of disinfection and sterilization.
18.15	Assist in removing/applying cast.
18.16	Assist in maintaining retraction, cutting suture and holding instruments as directed by the surgeon in the second assistant role.
18.17	Prepare specimen for laboratory analysis.
18.18	Decontaminate instruments equipment and environment.
18.19	Replenish supplies and equipment.
18.20	Describe how to update procedure/preference cards.
18.21	Apply electrical knowledge to safe patient care practices in surgery.

**Course Number: STS0012**  
**Occupational Completion Point: C**  
**Surgical Technologist 3 – 344 Hours – SOC Code 29-2055**

19.0	Demonstrate knowledge of and assist with surgical procedures. – The student will be able to:
19.01	Identify preoperative diagnosis, common complications, and operative pathology relating to specific surgical procedures.
19.02	List and describe types of incisions and wound closures.
19.03	Describe the usual sequence of a common surgical procedure (i.e. incision into the anatomy, dissection of the anatomy and closing of the anatomy).
19.04	Demonstrates the ability to select the appropriate instrument, equipment, or supply for each step of the procedure.
19.05	Demonstrates proper cost effective methods including the ability to identify “have available/hold items”.
20.0	Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology. – The student will be able to:
20.01	State methods, standards, and aids that assist a surgical technologist with interpreting and following legal responsibilities.
20.02	Describe the role of the surgical technologist in the healthcare setting. Provide health care within the ethical/legal framework of the surgical technologist’s role.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical learning experiences in an operating room and related areas are an integral part of this program. It is strongly recommended that a teacher to student ratio of 1:6 be held in the laboratory setting.

### Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program should meet the requirements of the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES).

After successful completion of a Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES) accredited program, students are eligible to take the National Board of Surgical Technologist and Surgical Assisting (NBSTSA), Certified Surgical Technologist exam.

Please contact NBSTSA for more information on this exam:

National Board of Surgical Technologist and Surgical Assisting (NBSTSA)  
6 West Dry Creek Circle, Suite 100 Littleton, Colorado 80120  
**Toll-free:** (800) 707-0057



Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Central Sterile Processing Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170222	
CIP Number	0351101201	
Grade Level	30,31	
Standard Length	650 hours	
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.	
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-9093 Medical Equipment Preparers 31-9099 Healthcare Support Workers, All Other	
Basic Skills Level	Mathematics:	9
	Language:	9
	Reading:	9

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as supervisors, central supply, central supply workers, ambulatory surgery processors, surgical instrument processors, gastrointestinal (GI) flexible endoscope reprocessors, case cart technicians, inventory technicians, processing technicians, stock clerks: stock room or warehouse, sterilizers, central service technicians SOC Code 31-9093 ( medical equipment preparers).

The content includes but is not limited to central services departmental organization and function; basic anatomy, physiology, microbiology and chemistry related to central service activities; quality assurance; infection control and isolation techniques, principles of safety; principles, methods and controls of sterilization processes; cleaning, processing, packaging, distributing, storing, and inventory control of sterile goods, instruments,

trays, and equipment; medical terminology; surgical instrumentation; basic computer skills, interpersonal and job seeking skills, fundamentals of communication, case cart management, laparoscopic specialty, orthopedic specialty, flexible scope processing , shift supervisory skills and procurement of supplies and equipment.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	CENT SERV TECH 7 G OPR REG NURSE 7 G SURG TECH 7 G	90 hours	31-9099
B	STS0019	Central Sterile Service Materials Management		150 hours	31-9093
C	STS0013	Central Sterile Processing Technician		410 hours	31-9093

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Describe supply distribution systems and the principles of inventory control.
- 13.0 Demonstrate the ability to recall and dispose of or reprocess sterile supplies.
- 14.0 Identify fundamentals of the supply chain.
- 15.0 Demonstrate language arts knowledge and skills.
- 16.0 Solve problems using critical thinking skills, creativity and innovation.
- 17.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
- 18.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 19.0 Demonstrate the roles and responsibilities of the central supply worker.
- 20.0 Recognize basic principles of microbiology.
- 21.0 Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel.
- 22.0 Describe how central service is involved in controlling infections in hospitals.
- 23.0 Explain the purpose of Occupational Safety and Health Act.
- 24.0 Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items.
- 25.0 Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers.
- 26.0 Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Central Sterile Processing Technician  
Career Certificate Program Number: H170222**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: STS0019  
Occupational Completion Point: B  
Central Sterile Service Materials Management – 150 Hours – SOC Code 31-9093**

12.0	Describe supply distribution systems and the principles of inventory control. -- The student will be able to:
12.01	Define the benefits of inventory control.
12.02	Describe the methods of inventory control.
12.03	Compare the advantages and disadvantages of each distribution methods.
12.04	Process a requisition marked "stat" - locate article, price, etc.
12.05	Demonstrate the process of stock rotation.
12.06	Describe the processes for loaner instrumentation and equipment.
12.07	Describe the process of product evaluation.
12.08	Describe the procedures for tracking the usage of medical/surgical supplies, patient care equipment and specialty carts.
12.09	Describe the procedures for documenting supply and equipment charges.
12.10	Demonstrate the methods of case cart preparation and the utilization of preference cards.

13.0	Demonstrate the ability to recall and dispose of or reprocess sterile supplies. -- The student will be able to:
13.01	Explain the factors that affect how long a package can be considered safe for use.
13.02	Explain the differences between event related, date related, and manufacturer recommendations.
13.03	State the methods of determining expiration dates.
13.04	List the steps in reprocessing outdated hospital packaged items.
13.05	List conditions that would make a product unsafe for use
13.06	Describe the use of tamper evident seals.
13.07	Describe the methods of reprocessing.
13.08	Identify standards and facility policies on reprocessing of single use items.
13.09	Describe the process of recall for medical/surgical supplies.
14.0	Identify fundamentals of the supply chain. -- The student will be able to:
14.01	Describe the process of supply chain management.
14.02	Communicate with other hospitals, facilities, or company representatives for procurement of supplies and equipment.
14.03	Describe several different methods of procurement of supplies.
14.04	Describe basics of receiving items, including documentation of receiving and release to other facilities.

**Course Number: STS0013**  
**Occupational Completion Point: C**  
**Central Sterile Processing Technician– 410 Hours – SOC Code 31-9093**

15.0	Demonstrate language arts knowledge and skills. – The students will be able to:
15.01	Locate, comprehend and evaluate key elements of oral and written information.
15.02	Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
15.03	Present information formally and informally for specific purposes and audiences.
16.0	Solve problems using critical thinking skills, creativity, and innovation. – The students will be able to:
16.01	Employ critical thinking skills independently and in teams to solve problems and make decisions.



16.02	Employ critical thinking and interpersonal skills to resolve conflicts.
16.03	Identify and document workplace performance goals and monitor progress toward those goals.
16.04	Conduct technical research to gather information necessary for decision-making.
17.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. – The students will be able to:
17.01	Describe the nature and types of healthcare organizations.
17.02	Explain the effect of key organizational systems on performance and quality.
17.03	List and describe quality control systems and/or practices common to the workplace.
17.04	Explain the impact of the global economy on healthcare organizations.
18.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:
18.01	Employ leadership skills to accomplish organizational goals and objectives.
18.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
18.03	Conduct and participate in meetings to accomplish work tasks.
18.04	Employ mentoring skills to inspire and teach others.
18.05	Analyze attributes and attitudes of an effective leader.
18.06	Recognize factors and situations that may lead to conflict.
18.07	Demonstrate effective techniques for managing team conflict.
19.0	Demonstrate the roles and responsibilities of the central supply worker. -- The student will be able to:
19.01	Describes professional standards related to personal hygiene and dress codes for the central supply worker to include appropriate PPE.
19.02	Identifies relevant federal, state, and local guidelines, standards and regulations.
19.03	Describes the function and workflow of the sterile processing department.
19.04	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, and reaching.
19.05	Apply policies and procedures related to sterile processing functions (safety, infection control, disaster control, disaster, MSDS, incident reports, etc.).
19.06	Describes importance of following device, equipment, instrument or supply manufacturer's instructions for processing, operation, and troubleshooting.

20.0	Recognize basic principles of microbiology. -- The student will be able to:
20.01	Describe terms related to microbiology and the control of microorganisms in central sterile processing departments.
20.02	Identify the main categories of microorganisms.
20.03	Describe the life functions of microorganisms.
20.04	Describe conditions affecting the growth of bacteria.
20.05	Describe special methods used to destroy harmful microorganisms on fomites in the environment.
20.06	List the helpful microorganisms.
20.07	Describe how the body controls the growth of pathogenic microorganisms.
20.08	Identify pathogenic microorganisms commonly found in central service departments.
21.0	Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel. -- The student will be able to:
21.01	Identify word elements for medical terms.
21.02	Relate anatomical concepts to orthopedic devices and other supplies and equipment issued by the CS Department.
22.0	Describe how central service is involved in controlling infections in hospitals. -- The student will be able to:
22.01	Describe hospital acquired infections.
22.02	Describe the types of isolation.
22.03	Describe the organization and functions of CS.
22.04	Describe the CS responsibilities for infection control and traffic patterns when in the operating room and other departments.
22.05	Identify proper storage and transportation standards for supplies in the facility (receivables, sterile, clean, or contaminated).
22.06	Describe the organizational patterns of health care facilities.
23.0	Explain the purpose of occupational safety and health act. -- The student will be able to:
23.01	Describe how employees are protected under OSHA.
23.02	Describe potential workplace hazards in CS. (wet floors, chemicals, fumes, gases, steam, electrical outlets, body fluids, microorganisms, sharps, and medical wastes).
23.03	Describe the role preventive maintenance plays in patient and personnel safety in the hospital.

23.04	Explain the purpose of Florida's "Right to Know" law and its provisions.
23.05	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.
23.06	Implement appropriate regulatory and accreditation agency patient safety guidelines.
24.0	Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items. -- The student will be able to:
24.01	Describe the importance of thorough cleaning to the overall objectives of making items safe for patient use.
24.02	Explain the importance of following manufacturers' instructions in cleaning each item for reprocessing.
24.03	Describe the levels of disinfection, the cleaning process and methods of disinfection for the environment, instruments, syringes, needles, rubber goods and equipment.
24.04	Describe the mechanisms of action for each disinfection method including ultrasonic machines and washer/sterilizers.
24.05	Describe the strategies for managing difficult to control microorganisms that require isolation techniques and specialized decontamination methods including Creutzfeldt - Jakob disease (CJD).
24.06	Describe the factors affecting decontamination (water temperature, loading procedures, water impurities, opening and disassembling).
24.07	Distinguish correct reprocessing policies related to single use, limited use, and reusable items.
24.08	Describe decontamination methods for drill systems and batteries.
24.09	Describe the function of case cart washers, and alternative methods of cleaning.
24.10	Describe the need for testing and monitoring all decontamination machines for proper function and cleaning agents.
24.11	Explain the importance of using correct chemicals for cleaning in regards to water quality, PH, filters, softeners, enzymes, lubricants.
24.12	Describe the types, characteristics, and uses of chemicals, solutions, and gases utilized for decontamination (detergents, disinfectants, enzymatics, and germicides).
24.13	Demonstrate the decontamination process for instruments, syringes, needles, rubber goods and equipment.
24.14	Demonstrate flexible endoscopic leak testing, decontamination, and reprocessing.
24.15	Demonstrates decontamination and proper handling of rigid scopes.
24.16	Describes the methods of high level disinfection including manual and automated endoscopic reprocessor (AER).
24.17	Describe the types of sterilizers and methods of sterilization.
24.18	Describe the primary objectives in selecting the correct packaging materials for both the individual item and the sterilization method to be used.

24.19	Describe the principles of packaging.
24.20	Describe the characteristics of packaging materials in relationship to sterilization methods.
24.21	Describe the principles of linen pack and tray construction/assembly.
24.22	Describe the recommended labeling methodologies.
24.23	Identify basic surgical procedure trays, instruments, supplies, and accessories.
24.24	Explain the principles utilized when loading different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.25	Recognize equipment malfunction and list corrective actions.
24.26	Demonstrate the wrapping of procedure trays, instruments and other supplies.
24.27	Demonstrate loading of different kinds of wrapped packs or packages into a sterilizer to be assured of sterilant penetration.
24.28	Describe how sterile supplies should be handled.
24.29	Demonstrate handling, transportation and storage of clean, sterile and nonsterile supplies and equipment.
25.0	Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers. -- The student will be able to:
25.01	Describe the types of sterilization, sterilization cycles, and parameters for each.
25.02	Describe the importance of the manufacturer's recommendations for the safe operation of each type of sterilizer.
25.03	Describe the methods of sterilization monitoring.
25.04	Demonstrate the process of preparing and documenting the sterilizer load contents for each sterilizer correctly according to the manufacturer's recommendations.
25.05	Demonstrate the operation, testing, and monitoring of sterilizers.
25.06	Demonstrate the ability to interpret and document monitoring devices, printouts, and charts accurately for each sterilization system utilized.
25.07	Identify the standards for, and facility policy regarding, frequency of monitoring for all sterilizers.
26.0	Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the surgical specialty. -- The student will be able to:
26.01	Describe instrument terminology and identify the anatomy of surgical instruments (jaws, shanks, box locks, rings, etc.).
26.02	Describe the types and functions of instruments.
26.03	Describe the types of instrument construction.

26.04	Demonstrate appropriate techniques for inspection and testing of instruments.
26.05	Identify instrumentation and equipment by name and usage.
26.06	Correctly label instrumentation and equipment.
26.07	Demonstrate the methods of instrument identification, marking, and tracking of use.
26.08	Demonstrate the assembly of various instrument sets and surgical specialty equipment.
26.09	Demonstrate the process regarding the manufacturer's recommendations for instrument and equipment care including handling, operation, maintenance, and troubleshooting.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Inquiries about a voluntary certification for sterile processing and distribution may be made to:

International Association of Hospital Central Service Materiel Management (IAHCSMM)  
213 West Institute Place, Suite 307, Chicago, IL 60610  
Toll Free: 800-962-8274

OR

Certification Board for Sterile Processing and Distribution, Inc. (CBSPD)

2 Industrial Park Road-Suite 3  
Alpha, NJ 08865

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations programs at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 9, and Reading 9. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Phlebotomy  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170302
CIP Number	0351100901
Grade Level	30, 31
Standard Length	165 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9097 Phlebotomists 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as phlebotomists SOC Code 31-9097 Phlebotomists, All other.

The content includes but is not limited to communication, leadership, human relations, and employability skills; performance of safe and efficient work practices in obtaining adequate and correct blood specimens by capillary or venipuncture on adults, children and neonates; maintaining the integrity of the specimen in relation to the test to be performed; preparing blood smears; labeling specimens accurately and completely; collecting timed specimens; promoting the comfort and well-being of the patient while performing blood collecting duties; observing safety policies and procedures; medical terminology; emergency procedures including CPR (Heartsaver); delivering a variety of clinical specimens to the clinical laboratory; sorting and recording specimens received in the laboratory; centrifuging specimens and preparing aliquots of samples according to the designated protocol; distributing samples to appropriate laboratory sections; and preparing collection trays for specimen procurement.



**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	PHLEB 7G	90 hours	31-9099
B	MEA0520	Phlebotomist	LAB TECH @7 7G MED ASST 7G PARAMEDIC @7 7G REG NURSE 7 G RESP THER @7 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-9097

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills.
- 13.0 Discuss phlebotomy in relation to the health care setting.
- 14.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
- 15.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 16.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 17.0 Practice infection control following standard precautions.
- 18.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 19.0 Practice quality assurance and safety.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Phlebotomy  
Career Certificate Program Number: H170302**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: MEA0520  
Occupational Completion Point: B  
Phlebotomist – 75 Hours – SOC Code 31-9097**

12.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01	Demonstrate the appropriate professional behavior of a phlebotomist.
12.02	Explain to the patient the procedure to be used in specimen collection.
12.03	Explain in detail the importance of identifying patients correctly when drawing blood.
12.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
12.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
13.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.
13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.

13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
14.01	Describe and define major body systems with emphasis on the circulatory system.
14.02	List and describe the main superficial veins used in performing venipuncture.
14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
14.05	Compare and contrast between serum and plasma as it relates to blood collection.
14.06	Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
15.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.
15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
15.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
16.01	Follow approved procedure for completing a laboratory requisition form.
16.02	Recognize a properly completed requisition.
16.03	Demonstrate knowledge of established protocol for patient and specimen identification.
16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
16.06	Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling

	of equipment and specimens, and appropriate patient care.
16.07	Describe the correct order of draw.
16.08	Describe the use of barcoding systems used for specimen collection.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term “hospital acquired infection”.
17.02	Describe and practice procedures for infection prevention including hand washing skills.
17.03	Discuss transmission based precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:
19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.

19.02 Practice appropriate patient safety.
19.03 Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
19.04 Follow documentation procedures for work related accidents.
19.05 Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

A voluntary national certification is available through an exam offered by:

The National Health Career Association  
7500 West 160<sup>th</sup> Street  
Stilwell, Kansas 66085  
PH: 800-499-9092 x8223 Fax: 973-644-4797

To be eligible students must:

1. Have a High School Diploma or equivalency and have completed an NHA approved training program.
- OR**
2. Have a High School Diploma or equivalency and have worked in the field for a minimum of one year.

Although there is no state licensure required for phlebotomists, graduates with required amounts of work experience may obtain certification from national credentialing agencies such as the American Society of Clinical Pathologists (ASCP) and the American Society of Phlebotomy Technicians (ASPT), and American Medical Technologists (AMT).

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.



MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Medical Laboratory Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170306
CIP Number	0351080201
Grade Level	30, 31
Standard Length	465 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2012 Medical and Clinical Laboratory Technicians 31-9097 Phlebotomists 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as medical laboratory aides 29-2012 Medical and Clinical Laboratory Technicians

The content includes but is not limited to communication, interpersonal and professional skills, appropriate scientific principles of microbiology, chemistry, physics, anatomy and physiology integrated into skill development and clinical learning.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	LAB TECH @7 7G	90 hours	31-9099
B	MEA0520	Phlebotomist	LAB TECH @7 7G MED ASST 7G PARAMEDIC @7 7G REG NURSE 7 G RESP THER @7 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-9097
C	MEA0560	Medical Lab Assistant	LAB TECH @7 7G	300 hours	29-2012

## **Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills.
- 13.0 Discuss phlebotomy in relation to the health care setting.
- 14.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
- 15.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 16.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 17.0 Practice infection control following standard precautions.
- 18.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 19.0 Practice quality assurance and safety.
- 20.0 Identify the federal and state laws which serve to regulate the provision of laboratory services, including CLIA, Florida Statutes, and Florida Administrative Code.
- 21.0 Demonstrate a basic understanding of ICD and CPT coding Systems.
- 22.0 Demonstrate basic knowledge of microbiology.
- 23.0 Demonstrate basic knowledge of urinalysis.
- 24.0 Demonstrate basic knowledge of clinical chemistry.
- 25.0 Demonstrate basic knowledge of hematology.
- 26.0 Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).
- 27.0 Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.
- 28.0 Successfully complete learning experiences in the clinical setting.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Laboratory Assisting  
Career Certificate Program Number: H170306**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: MEA0520  
Occupational Completion Point: B  
Phlebotomist – 75 Hours – SOC Code 31-9097**

12.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01	Demonstrate the appropriate professional behavior of a phlebotomist.
12.02	Explain to the patient the procedure to be used in specimen collection.
12.03	Explain in detail the importance of identifying patients correctly when drawing blood.
12.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
12.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
13.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.
13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.

13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:
14.01	Describe and define major body systems with emphasis on the circulatory system.
14.02	List and describe the main superficial veins used in performing venipuncture.
14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
14.05	Compare and contrast between serum and plasma as it relates to blood collection.
14.06	Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
15.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.
15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
15.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
16.01	Follow approved procedure for completing a laboratory requisition form.
16.02	Recognize a properly completed requisition.
16.03	Demonstrate knowledge of established protocol for patient and specimen identification.
16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
16.06	Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling

	of equipment and specimens, and appropriate patient care.
16.07	Describe the correct order of draw.
16.08	Describe the use of barcoding systems used for specimen collection.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term hospital acquired infection.
17.02	Describe and practice procedures for infection prevention including hand washing skills.
17.03	Discuss transmission based precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:
19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.



19.02	Practice appropriate patient safety.
19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
19.04	Follow documentation procedures for work related accidents.
19.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.

**Course Number: MEA0560**  
**Occupational Completion Point: C**  
**Medical Lab Assistant – 300 Hours – SOC Code 29-2012**

20.0	Identify the federal and state laws which serve to regulate the provision of laboratory services, including CLIA, Florida Statutes, and Florida Administrative Code. – The student will be able to:
20.01	Explain the CLIA test complexity model and describe the characteristics required for FDA classification of a test as waived.
20.02	Explain the categories of testing personnel established by both CLIA and Florida regulations and describe the basic educational and/or experiential qualifications for each category.
20.03	Explain the differences in requirements for a physician practice laboratory, a hospital laboratory and an independent clinical laboratory.
20.04	Describe Alternate Site Testing requirements as they apply to hospitals in Florida and compare and contrast these with the requirements for CLIA waived testing and Provider Performed Microscopy. Apply the concepts of Point-of-Care or Near Patient testing to these requirements.
20.05	Demonstrate an understanding of the concepts of “scope of practice”, “professional judgment”, and “duty/obligation to report”.
21.0	Demonstrate a basic understanding of ICD and CPT coding Systems. – The student will be able to:
21.01	Explain the characteristics of the International Classification of Disease System (ICD), and its important function in substantiating the clinical record.
21.02	Explain the characteristics of Healthcare Common Procedure Coding System (HCPCS), including the two primary levels of codes, and its function in reporting medical procedures including laboratory testing.
21.03	Explain the differences between analyte, method, and unlisted procedure CPT codes and the hierarchy for selecting CPT codes for reporting laboratory tests.
21.04	Describe the concept of medical necessity as set forth in National or Local coverage Decisions (NCD and LCD) for lab testing under the Medicare Program.
21.05	Review the concept of congressionally –mandated screening tests under the Medicare Program.
22.0	Demonstrate basic knowledge of microbiology. -- The student will be able to:
22.01	Perform techniques of microbiology related to disinfection techniques.
22.02	Discuss techniques of microbiology related to isolation techniques.

22.03	Perform techniques of microbiology related to sterilization techniques.
22.04	Perform techniques of microbiology related to slide preparation.
22.05	Describe the basic operation and principles related to usage of microscopes.
22.06	Understand the staining and microscopic examination of gram stains.
22.07	Discuss techniques of microbiology related to primary inoculation media, specimen types, and transfer of cultures.
22.08	Perform basic techniques of microbiology in respect to routine and emergency specimen collection including time constraints.
22.09	Discuss classification, composition and preparation of culture media.
23.0	Demonstrate basic knowledge of urinalysis. – The student will be able to:
23.01	Understand urinalysis techniques related to normal and abnormal components of the urine.
23.02	Perform urinalysis techniques related to collection and preservation of specimens including time constraints.
23.03	Perform urinalysis techniques related to physical properties of urine.
23.04	Perform urinalysis techniques related to dipstick urine pH and describe clinical significance.
23.05	Discuss urinalysis techniques related to urine specific gravity techniques.
23.06	Perform dipstick or tablet (non-automated) urinalysis techniques related to performance of chemical tests.
23.07	Discuss urinalysis techniques related to microscopic identification of significant elements.
23.08	Perform urinalysis techniques related to principles and use of centrifuge.
24.0	Demonstrate basic knowledge of clinical chemistry. – The student will be able to:
24.01	Perform techniques of clinical chemistry related to metric measurement.
24.02	Perform techniques of clinical chemistry related to lab ware and clinical equipment.
24.03	Perform techniques of clinical chemistry related to reagent preparation, laboratory equipment and laboratory techniques.
24.04	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.
24.05	Discuss the importance of Quality Assurance as it relates to patient results.
24.06	Discuss techniques of clinical chemistry related to visual colorimetry, calibration and use of the spectrophotometer.

24.07	Demonstrate an understanding of the relationship between common clinical chemical tests and specific body systems and disorders.
25.0	Demonstrate basic knowledge of hematology. -- The student will be able to:
25.01	Discuss techniques of hematology related to counting formed elements of blood.
25.02	Perform techniques of hematology related to preparation and staining.
25.03	Discuss techniques of cell differential microscopic examination of blood films.
25.04	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
25.05	Perform techniques of hematology related to spun hematocrit tests.
25.06	Discuss techniques of hematology related to the use of platelet function analyzing instruments in addition to performing bleeding times.
25.07	Perform techniques of hematology related to hemoglobin tests.
25.08	Understand the use of and importance of red blood cell indices.
25.09	Discuss basic techniques of hematology related to normal and abnormal physiology.
26.0	Demonstrate the basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived). -- The student will be able to:
26.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:
26.01.01	Test principle
26.01.02	Storage & stability
26.01.03	Internal vs. external quality control
26.01.04	Specimen collection & preparation
26.01.05	Directions for use
26.01.06	Interpretation of results
26.01.07	Interfering substances
26.02	Explain the purpose of performing lot to lot correlations.
26.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.
26.04	Understand the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.

27.0	Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation. -- The student will be able to:
27.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.
27.02	Perform instrument maintenance.
27.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.
27.04	Identify normal limits and associate abnormal results with disease or disorders.
27.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.
28.0	Successfully complete learning experiences in the clinical setting. – The student will be able to:
28.01	Observe and participate as appropriate the skills outlined in outcomes for medical lab assisting.
28.02	Complete clinical rotations.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Pharmacy Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170500
CIP Number	0351080506
Grade Level	30, 31
Standard Length	1050 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals, Skills USA
SOC Codes (all applicable)	29-2052 Pharmacy Technicians 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 11 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

The content includes but is not limited to metric system, medical terminology, medicinal drugs, pharmaceutical compounding, USP 795 standards, sterile techniques, USP 797 and USP 800 standards, maintenance of inventory, IV preparation, receiving and handling of hazardous materials, preparing purchase orders, receiving and checking supplies purchased, printing labels, typing prescription labels, delivering medications, pricing

prescription drug orders and supplies, prepackaging unit dose packages, patient record systems, control records, data processing automation in pharmacy, computer application, employability skills, leadership and human relations skills, health and safety, including CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	PHARMACY 7G	90 hours	31-9099
B	PTN0084	Pharmacy Technician 1		360 hours	29-2052
	PTN0085	Pharmacy Technician 2		300 hours	
	PTN0086	Pharmacy Technician 3		300 hours	

**Regulated Programs**

**This program is regulated by the Department of Health; Florida Board of Pharmacy.**

This program must be approved by the Board of Pharmacy. Program completers who wish to work as Pharmacy Technicians in the State of Florida must register with the Board of Pharmacy (465.014 F.S.).



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Practice human relations.
- 13.0 Identify pharmaceutical abbreviations and terminology as related to Community Pharmacy Practice.
- 14.0 Identify medical and legal considerations in various pharmacy settings.
- 15.0 Perform clerical duties as related to Pharmacy Practice.
- 16.0 Demonstrate knowledge of basic pharmaceutical chemistry and drug classification.
- 17.0 Demonstrate knowledge of inventory management.
- 18.0 Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice.
- 19.0 Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology.
- 20.0 Prepare and deliver medications.
- 21.0 Repackage unit dose medications.
- 22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Pharmacy Technician  
Career Certificate Program Number: H170500**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: PTN0084  
Occupational Completion Point: B  
Pharmacy Technician 1 – 360 Hours – SOC Code 29-2052**

12.0	Practice human relation skills. - The student will be able to:
12.01	Explore the meaning and duties of a pharmacy technician.
12.02	Explore the organizational flow of responsibilities within a pharmacy setting.
12.03	Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04	Identify pharmacy organizations and their role in the profession to include student membership opportunities.
12.05	Identify the current trends and perspectives in the pharmacy practice.
12.06	Identify how team building can facilitate change within the pharmacy working environment.
12.07	Understand the importance of good interpersonal skills/soft skills in various pharmacy settings.
12.08	Demonstrate ethical conduct in job-related activities.
12.09	Identify State of Florida requirements for obtaining and maintaining pharmacy technician registration as well as continuing education requirements for renewal.
12.10	Explore the importance of national certification and the continuing education requirements for renewal.

13.0	Identify pharmaceutical abbreviations and terminology as related to pharmacy practice. - The student will be able to:
13.01	Utilize pharmaceutical medical terminology.
13.02	Analyze the major symbols and abbreviations used on prescriptions and state the meaning.
13.03	Identify safety strategies used to prevent medication errors due to pharmaceutical abbreviations and terminology.
14.0	Identify medical and legal considerations in various pharmacy settings. - The student will be able to:
14.01	Articulate the significance of current national and Florida law and administrative rules as they relate to the scope of practice for the pharmacy technician.
14.02	Convey an understanding of patient counseling requirements pertaining to OBRA-90 versus MTM (Medication Therapy Management).
14.03	Convey an understanding of medical legal concepts as they relate to the scope of practice for the pharmacy technician.
14.04	Explain the legal requirements for accurate pharmacy documentation and recordkeeping.
14.05	Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.
14.06	Convey an understanding of the patient's Bill of Rights as it relates to pharmacy practice.
14.07	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.
14.09	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials, the utilization of safety data sheets, and hazardous communication symbols.
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.11	Understand and explain the legal requirements for final check by the pharmacist
14.12	Classify activities that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists.
14.13	Explain the importance of information technology (IT) and its current use in various pharmacy settings.
15.0	Perform clerical duties as related to pharmacy practice. - The student will be able to:
15.01	Demonstrate retail pharmacy dispensing processes.
15.02	Identify potential errors that may result in Quality Related Events.
15.03	Utilize pharmacy software in processing pharmacy prescription data.
15.04	Identify and discuss applications of E-Prescribing and facsimile.

15.05	Utilize and apply interactive communication skills while gathering accurate information from patients and from other healthcare professionals
15.06	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements.
15.07	Create, complete and maintain patient profiles including third party billing information.
15.08	Understand the processes of third party billing, resolving rejections, and obtaining authorizations.
15.09	Demonstrate professional telephone communication skills within the scope of practice for the pharmacy technician.
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.
15.11	Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to various pharmacy practices.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification. -The student will be able to:
16.01	Define the major classifications of pharmaceuticals.
16.02	Categorize at least one official compendia of standards for quality and purity of drugs and authoritative information on dosage, administration and therapeutic equivalents.
16.03	Utilize pharmacy reference manuals and web sites.
16.04	Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory management. -The student will be able to:
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.
17.02	Maintain controlled substance inventory.
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.
17.05	Create electronic purchase orders.
17.06	Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.
17.08	Convey an understanding of the inventory control process implemented by Title II of the Drug Quality and Security Act.
18.0	Initiate measurement and calculating techniques as it relates to United States Pharmacopeia (USP) 795 (non-sterile) compounding in pharmacy practice. -The student will be able to:

18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.
18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.
18.03	Perform common pharmaceutical calculations.
18.04	Identify common pharmaceutical weighing equipment.
18.05	Identify common pharmaceutical volume measurement equipment.
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.

**Course Number: PTN0085**  
**Occupational Completion Point: B**  
**Pharmacy Technician 2 – 300 Hours – SOC Code 29-2052**

19.0	Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to human physiology. -The student will be able to:
19.01	Describe electrolyte balances and imbalances.
19.02	Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.
19.03	Demonstrate an understanding of common adult doses of medications, duration of common drug therapies, and respective contraindications including the BEERS Criteria.
19.04	Identify potential interactions that require a pharmacist's intervention pertaining to food/alcohol, herbal, OTC, and/or prescription medications.
20.0	Prepare and deliver medications. - The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Demonstrate institutional pharmacy dispensing processes.
20.03	Compare all new orders with medications listed on profiles while noting any changes.
20.04	Utilize special precautions in the preparation of medications for pediatric patients.
20.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.
20.06	Understand how to correctly fill and deliver medication cassettes.
20.07	Collect data from medication administration record.

20.08 Demonstrate use of automated medication dispensing equipment.

**Course Number: PTN0086**  
**Occupational Completion Point: B**  
**Pharmacy Technician 3 – 300-Hours – SOC Code 29-2052**

21.0 Repackage unit dose medications. - The student will be able to:

21.01 Locate correct stock container.

21.02 Operate unit dose packaging equipment.

21.03 Measure, count, and place individual dose in appropriate containers.

21.04 Understand precautions used when packaging unit dose hazardous drugs.

21.05 Record repackaged medication data correctly.

21.06 Summarize, evaluate, and describe the role of the technician in quality assurance activities as related to repackaging unit dose medication.

22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. - The student will be able to:

22.01 Convey an understanding of United States Pharmacopeia (USP) 797 regulations.

22.02 Convey an understanding of United States Pharmacopeia (USP) 800 regulations.

22.03 Compare medication order with label on vial and check expiration date of product.

22.04 Calculate drug dosage for parenteral use.

22.05 Understand common institutional drug names, dosages, and incompatibilities.

22.06 Reconstitute parenteral medications.

22.07 Demonstrate aseptic technique to withdraw medication from stock vial, measure correct quantity as instructed, select and insert it into IV solution without error.

22.08 Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.

22.09 Prepare parenteral solutions using proper aseptic technique.

22.10 Understand the preparation of Total Parenteral Nutrition (TPN) solutions.

22.11 Understand the preparation of chemotherapeutic agents using proper safety techniques.

22.12 Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.

22.13 Place label on IV solution container and record appropriately.
22.14 Perform quality control check of completed product.
22.15 Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.
22.16 Convey an understanding of the proper storage and disposal of hazardous drugs.
22.17 Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of sterile products.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Clinical practicum experiences are an integral part of this program.

### **Special Notes**

Due to the clinical experiences students are engaged in through the program and to ensure the safety of both the students and the patients the recommended student to instructor ratio in the classroom is 20:1 and in the lab is 4:1.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

It is recommended that program completers take national pharmacy technician certification exam offered by the Pharmacy Technician Certification Board, 2215 Constitution Ave. NW, Washington, DC 20037-2985, (202) 429-7576. This certification is offered all year round on a continual basis.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 11, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Records Transcribing/Healthcare Documentation  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170506
CIP Number	0351070701
Grade Level	30, 31
Standard Length	1200 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9094 Medical Transcriptionists 29-2099 Health Technologists and Technicians, All Other
Basic Skills Level	Mathematics: 9 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as SOC 31-9094 Medical Transcriptionists.

The content includes but is not limited to medical terminology, anatomy and physiology, grammar and punctuation, health care delivery systems, health information services, ethical and legal responsibilities, safety/security procedures, word processing/ transcription skills and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HIM0009	Introduction to Health Information Technology	MED RECTEC 7G MED TRANS 7G MED ASST 7G	90 hours	29-2099
B	HIM0074	Medical Transcriber 1		370 hours	31-9094
	HIM0075	Medical Transcriber 2		370 hours	
	HIM0081	Medical Transcriber 3		370 hours	

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Utilize appropriate medical and scientific terminology.
- 14.0 Apply concepts of disease, diagnosis, and treatment of the human body.
- 15.0 Apply rules of English grammar and punctuation.
- 16.0 Utilize medical references.
- 17.0 Apply healthcare documentation technology.
- 18.0 Perform functions specific to the medical transcription/healthcare documentation specialist.
- 19.0 Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Records Transcribing/Healthcare Documentation**  
**Career Certificate Program Number: H170506**

**Course Number: HIM0009**  
**Occupational Completion Point: A**  
**Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099**

01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Provide health information education to internal/external stakeholders.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.

02.11	Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:
09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.



09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.

**Course Number: HIM0074**  
**Occupational Completion Point: B**  
**Medical Transcriber 1 – 370 Hours – SOC Code 31-9094**

13.0 Utilize appropriate medical and scientific terminology. – The student will be able to:

13.01	Spell, define and pronounce medical words and their components.
13.02	Define and use medical abbreviations, brief forms, acronyms, eponyms, and foreign words and phrases commonly used in healthcare practice.
13.03	Identify and use the medical terminology related to the structure and function of the human body.
13.04	Identify, pronounce, spell, and define pharmacological terminology.
13.05	Distinguish between or among medical homophones (sound-alikes), commonly confused medical terms, and synonyms.
14.0	Apply concepts of disease, diagnosis, and treatment of the human body. – The student will be able to:
14.01	Identify and explain structure and function of the human body in health and in disease.
14.02	Identify disorders and treatments of the human body.
14.03	Identify and explain procedures and technologies, imaging, laboratory, pathology, and their application to diseases and disorders.
14.04	Demonstrate knowledge of pharmacology to include indications and contraindications, dosage, methods of administration, interactions and side effects.
14.05	Organize surgical procedures and other interventional diagnostic and treatment modalities by specialty, indications or related diagnoses, technique, and typical findings.
15.0	Apply rules of English grammar and punctuation. – The student will be able to:
15.01	Recognize and use the principal parts of speech.
15.02	Recognize and use punctuation marks.
15.03	Apply rules of numerical expression.
15.04	Apply rules of capitalization.
15.05	Define and use abbreviations.
15.06	Demonstrate ability to spell words in common usage.
15.07	Evaluate and use reliable resources for research and practice.
15.08	Apply correct medical style as defined by authorities (i.e. AHDI Book of style, AMA Manual of Style).
15.09	Edit and proofread healthcare documentation.
15.10	Recognize and use report formats.
16.0	Utilize medical references. – The student will be able to:

16.01	Utilize medical dictionaries and specialty word books.
16.02	Utilize trade, generic and chemical drug names utilizing reference sources.
16.03	Utilize diagnostic test terminology.
16.04	Utilize appropriate resources located on the internet.

**Course Number: HIM0075**  
**Occupational Completion Point: B**  
**Medical Transcriber 2 – 370 Hours – SOC Code 31-9094**

17.0	Apply healthcare documentation technology. – The student will be able to:
17.01	Demonstrate keyboarding skills with an awareness of productivity and accuracy standards and definitions.
17.02	Demonstrate use of transcription, dictation, and speech recognition technology.
17.03	Accurately transcribe and/or edit a required minimum number of reports to include history and physical, consultations, discharge summaries, operative reports and special reports, applying competencies specified in the areas of English language, medical knowledge, technology, healthcare documentation, and professional practice.
17.04	Demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
17.05	Identify inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
17.06	Demonstrate advanced use of word processing programs, including commands for editing, file organization, and retrieval.
17.07	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
17.08	Demonstrate a general knowledge of health information systems including the functions related to dictation/transcription integration, editing, and common terminology.
18.0	Perform functions specific to the medical transcriptionist/ healthcare documentation specialist. – The student will be able to:
18.01	Promote common health information policies and procedures for security specific to the role of the medical transcriptionist/ healthcare documentation specialist.
18.02	Demonstrate workstation ergonomics specific to the medical transcriptionist/ healthcare documentation specialist
18.03	Demonstrate an awareness of the opportunities in medical transcription/healthcare documentation and related careers and the importance of professional development.
18.04	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
18.05	Explain the scope of work of the medical transcriptionist/healthcare documentation specialist.

18.06 Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).

**Course Number: HIM0081**

**Occupational Completion Point: B**

**Medical Transcriber 3 – 370 Hours – SOC Code 31-9094**

19.0 Perform proficiently in the application of healthcare documentation/transcribing concepts and skills through practical lab experiences. – The student will:

36.01 Model the role and responsibilities of the healthcare documentation transcription specialists.

36.02 Apply knowledge and skills related to speech recognition, dictation, documentation standards, technology, and transcription.

36.03 Perform real-world applications of healthcare documentation/transcription principles and best practices.

36.04 Analyze errors and devise corrective strategies.

36.05 Transcribe and/or edit a minimum 2100 minutes of authentic clinician-generated documentation.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

For those programs preparing students for the Registered Healthcare Documentation Specialist industry certification through Association for the Healthcare Documentation Integrity (AHDI) the model curriculum of the AHDI should be used to properly prepare students for this examination. Industry Certification is voluntary and is sponsored by the AHDI.

4230 Kiernan Avenue  
Suite 130  
Modesto, CA 95356  
Phone: Toll Free (800) 982-2182 - Direct (209) 527-9620  
Fax: 209-527-9633.

Students should be encouraged to become members of their professional organization, and participate in the state/local chapter activities.

The program should prepare the graduate to take the national examination to become a Registered-Medical Transcriptionist. Certification is voluntary and is sponsored by the Association for Healthcare Documentation Integrity (AHDI).

Outcomes 01- 12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170515
CIP Number	0351080102
Grade Level	30, 31
Standard Length	1300 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9092 Medical Assistants 31-9099 Healthcare Support Workers, All Other 43-4171 Receptionists and Information Clerks 31-9097 Phlebotomists
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as medical assistants SOC 31-9092.

The content includes but is not limited to communication, transcultural communication in healthcare, interpersonal skills, legal and ethical responsibilities, health-illness concepts, administrative and clinical duties, emergency procedures including CPR and first aid, emergency preparedness, safety and security procedures, medical terminology, anatomy and physiology, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 5 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	MED ASST 7G LAB TECH @7 7G REG NURSE 7 G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	90 hours	31-9099
B	MEA0002	Introduction to Medical Assisting	MED ASST 7G LAB TECH @7 7G REG NURSE 7 G BUS ED 1@2 VOE @7	250 hours	31-9092
	MEA0501	Medical Office Procedures	SECRETAR 7 G CLERICAL @7 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	43-4171
C	MEA0521	Phlebotomist, MA	MED ASST 7G LAB TECH @7 7G REG NURSE 7 G PHLEB 7G PRAC NURSE @7 %7%G (Must be a	75 hours	31-9097



OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
			Registered Nurse)		
D	MEA0543	EKG Aide, MA		75 hours	31-9099
E	MEA0581	Clinical Assisting	MED ASST 7G LAB TECH @7 7G REG NURSE 7 G PHLEB 7G PRAC NURSE @7 %7%G (Must be a Registered Nurse	230 hours	31-9092
	MEA0530	Pharmacology for Medical Assisting		90 hours	
	MEA0573	Laboratory Procedures		125 hours	
	MEA0506	Administrative Office Procedures		90 hours	
	MEA0942	Practicum Experience		200 Hours	

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate proper use of medical terminology.
- 13.0 Demonstrate knowledge of legal and ethical responsibilities for medical assistants.
- 14.0 Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states.
- 15.0 Demonstrate basic clerical/medical office duties.
- 16.0 Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy.
- 17.0 Discuss phlebotomy in relation to the health care setting.
- 18.0 Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist.
- 19.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
- 20.0 Demonstrate skills and knowledge necessary to perform phlebotomy.
- 21.0 Practice infection control following standard precautions.
- 22.0 Practice accepted procedures of transporting, accessioning and processing specimens.
- 23.0 Practice quality assurance and safety.
- 24.0 Describe the role of a medical assistant with intravenous therapy in oncology and dialysis.
- 25.0 Describe the cardiovascular system.
- 26.0 Identify legal and ethical responsibilities of an EKG aide.
- 27.0 Perform patient care techniques in the health care facility.
- 28.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.
- 29.0 Demonstrate basic office examination procedures.
- 30.0 Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques.
- 31.0 Demonstrate minor treatments.
- 32.0 Demonstrate knowledge of basic diagnostic medical assisting procedures.
- 33.0 Demonstrate basic radiology procedures.
- 34.0 Demonstrate knowledge of pharmaceutical principles and administer medications.
- 35.0 Perform CLIA-waived diagnostic clinical laboratory procedures.
- 36.0 Demonstrate knowledge of emergency preparedness and protective practices.
- 37.0 Perform administrative office duties.

- 38.0 Perform administrative and general skills.
- 39.0 Perform clinical and general skills.
- 40.0 Display professional work habits integral to medical assisting.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Medical Assisting  
Career Certificate Program Number: H170515**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

<b>Course Number: MEA0002 Occupational Completion Point: B Introduction to Medical Assisting – 250 Hours – SOC Code 43-4171</b>	
<b>12.0</b>	Demonstrate proper use of medical terminology. – The student will be able to:
12.01	Use medical terminology as appropriate for a medical assistant.
12.02	Identify medical terms labeling the word parts.
12.03	Define medical terms and abbreviations related to all body systems.
<b>13.0</b>	Demonstrate knowledge of legal and ethical responsibilities for medical assistants. – The student will be able to:
13.01	Describe the role of the medical assistant.
13.02	Understand the importance of order entry as it relates to certification of the medical assistant.
13.03	Provide health care as set forth in Florida Statute 458.3485 for the medical assistant.
13.04	Distinguish between the liability of the physicians and staff members in the medical office.
13.05	Explain the principles for preventing medical liability.
13.06	List the principles in the Codes of Ethics for Medical Assistants as stated by the American Association of Medical Assistants.

14.0	Demonstrate an understanding of anatomy and physiology concepts in both illness and wellness states. – The student will be able to:
14.01	Define the terms Anatomy and Physiology
14.02	Define both medical terms and abbreviations related to all body systems.
14.03	Define the principle directional terms, planes, quadrants and cavities used in describing the body and the association of body parts to one another.
14.04	Define the levels of organization of the body inclusive of, but not limited to, cells, organs and body systems.
14.05	Describe the function of the 11 major organ systems of the body (1) Integumentary, (2) skeletal, (3) muscular, (4) Nervous, (5) endocrine, (6) circulatory (cardiovascular) (7) lymphatic, (8) respiratory, (9) digestive, (10) urinary, and (11) reproductive.
14.06	Describe symptoms and common disease pathology related to each body system and the relationship of the disease process to other body systems.
14.07	Discuss diagnostic options to identify common disease pathology and corresponding basic treatment.
14.08	Compare structure and function of the body across the life span.

**Course Number: MEA0501**  
**Occupational Completion Point: B**  
**Medical Office Procedures – 75 Hours – SOC Code 43-4171**

15.0	Demonstrate basic clerical/medical office duties. – The student will be able to:
15.01	Perform effective communication skills essential to the medical office.
15.02	Maintain filing systems.
15.03	Operate office equipment and perform clerical office procedures.
15.04	Discuss principles of using electronic health record (EHR).
15.05	Prepare and maintain medical records both manually and within the electronic health record (EHR).
15.06	Screen and process mail.
15.07	Schedule routine appointments and patient admissions and/or procedures both manually and within the electronic health record (EHR).
15.08	Adhere to current government regulations, risk management and compliance within the scope of practice of a medical assistant practicing in the State of Florida.
15.09	Maintain office inventory.
15.10	Inform patients of office policies both verbally and written.

15.11	Perform general housekeeping duties.
15.12	Perform daily office activities both manually and within the electronic health record (EHR).
15.13	Receive patients and visitors.
15.14	Identify and maintain office security policies/procedures.

**Course Number: MEA0521**  
**Occupational Completion Point: C**  
**Phlebotomist, MA – 75 Hours – SOC Code 31-9097**

16.0	Demonstrate accepted professional, communication, and interpersonal skills as related to phlebotomy. – The student will be able to:
16.01	Demonstrate the appropriate professional behavior of a phlebotomist.
16.02	Explain to the patient the procedure to be used in specimen collection.
16.03	Explain in detail the importance of identifying patients correctly when drawing blood.
16.04	Describe the scope of practice for a phlebotomist.
16.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
16.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
17.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:
17.01	List, classify and discuss various departments and services within the health care setting with which the phlebotomist must interact to obtain laboratory specimens from patients.
17.02	Identify the major departments/sections within the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
17.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
18.0	Identify the anatomic structure and function of body systems in relation to services performed by a phlebotomist. – The student will be able to:
18.01	Describe and define major body systems with emphasis on the circulatory system.
18.02	List and describe the main superficial veins used in performing venipuncture.
18.03	Locate the most appropriate site(s) for both capillary and venipuncture.
18.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.

18.05	Compare and contrast between serum and plasma as it relates to blood collection.
18.06	Discuss hemostasis as it relates to blood collection.
19.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:
19.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
19.02	Explain the special precautions and types of equipment needed to collect blood from a pediatric patient.
19.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.
19.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
19.05	Describe the types of specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
19.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
19.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
20.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:
20.01	Follow approved procedure for completing a laboratory requisition form.
20.02	Recognize a properly completed requisition.
20.03	Demonstrate knowledge of established protocol for patient and specimen identification.
20.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
20.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
20.06	Perform venipuncture by evacuated tube, butterfly, and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.
20.07	Describe the correct order of draw.
20.08	Describe the use of barcoding systems used for specimen collection.
20.09	Perform a capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
20.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
20.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope, light headedness, vomiting, and nerve involvement.
20.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.



20.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
20.14	Demonstrate the proper procedure for collecting blood cultures.
20.15	Discuss the effects of hemolysis and methods of prevention.
20.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
21.0	Practice infection control following standard precautions. – The student will be able to:
21.01	Define the term hospital acquired infection.
21.02	Describe and practice procedures for infection prevention including hand washing skills.
21.03	Discuss transmission based precautions.
21.04	Identify potential routes of infection and their complications.
22.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
22.01	Demonstrate good laboratory practice for preparation and processing (e.g. centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool, and wound culture specimens.
22.02	Demonstrate knowledge of accessioning procedures.
22.03	Describe the significance of time constraints for specimen collection and delivery.
22.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
22.05	Follow protocol for accepting verbal test orders and explain procedure for obtaining signature or other form of authentication of verbal orders.
23.0	Practice quality assurance and safety. – The student will be able to:
23.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
23.02	Practice appropriate patient safety.
23.03	Practice safety in accordance with OSHA (state & federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps and biohazardous materials.
23.04	Follow documentation procedures for work related accidents.
23.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.
24.0	Describe the role of a medical assistant with intravenous therapy in oncology and dialysis. – The student will be able to:
24.01	Outline the principles of intravenous therapy.

24.02	Understand intravenous terminology, practices, and equipment.
24.03	Describe the dangers of intravenous treatment.
24.04	Describe the role of the medical assistant in assisting with intravenous therapy.

<b>Course Number: MEA0543</b>	
<b>Occupational Completion Point: D</b>	
<b>EKG Aide, MA – 75 Hours – SOC Code 31-9099</b>	
25.0	Describe the cardiovascular system. – The student will be able to:
25.01	Locate the heart and surrounding structures.
25.02	Diagram and label the parts of the heart and list the functions of each labeled part.
25.03	Trace the flow of blood through the cardiopulmonary system.
26.0	Identify legal and ethical responsibilities of an EKG aide. – The student will be able to:
26.01	Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.
26.02	Maintain a safe and efficient work environment.
26.03	Maintain EKG equipment so it will be safe and accurate.
27.0	Perform patient care techniques in the health care facility. – The student will be able to:
27.01	Describe the physical preparation of the patient for EKG testing.
27.02	Identify patient and verify the requisition order.
27.03	Prepare patient for EKG testing.
27.04	State precautions required when performing an EKG.
28.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. – The student will be able to:
28.01	Calibrate and maintain EKG equipment in the work environment.
28.02	Identify three types of lead systems (standard/limb, augmented, and precordial/chest).
28.03	State Einthoven's triangle.
28.04	Demonstrate proper lead placement including lead placement with special consideration for various patients with special needs.

28.05	Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.
28.06	Identify artifacts and mechanical problems.
28.07	Perform a 12 lead EKG.
28.08	Perform a rhythm strip.
28.09	Recognize normal sinus rhythm.
28.10	Report any dysrhythmias that are not normal sinus rhythm.
28.11	Recognize a cardiac emergency as seen on the EKG.
28.12	Use documentation skills to identify electrocardiographs.

<b>Course Number: MEA0581</b>	
<b>Occupational Completion Point: E</b>	
<b>Clinical Assisting – 230 Hours – SOC Code 31-9092</b>	
29.0	Demonstrate basic office examination procedures. – The student will be able to:
29.01	Prepare patients for and assist the physician with physical examinations including, but not limited to, pre and post-natal, male and female reproductive, rectal, and pediatric.
29.02	Measure and record vital signs, recognizing abnormalities and danger signs.
29.03	Measure and record a pulse pressure
29.04	Measure and record an apical pulse.
29.05	Measure and record a orthostatic blood pressure
29.06	Record patient data.
29.07	Instruct patient on breast and testicular self-examinations.
29.08	Assist with pediatric procedures, including, but not limited to, weighing, measuring, and collecting specimens.
29.09	Instruct patients regarding health care and wellness practices including but not limited to dietary guidelines necessary for common diseases.
29.10	Create a patient teaching plan which addresses dietary guidelines and special needs.
29.11	Explore and utilize the U.S. Department of Agriculture's "My Plate" Food Guide.

29.12	Prepare patients for diagnostic procedures.
30.0	Demonstrate knowledge of the fundamentals of microbial control and use aseptic techniques. – The student will be able to:
30.01	Demonstrate competence in sanitation, disinfection, and sterilization.
30.02	Identify common instruments.
30.03	Sterilize and maintain instruments and supplies.
30.04	Sanitize instruments.
30.05	Wrap articles for autoclave.
30.06	Sterilize articles in autoclave.
30.07	Chemically disinfect articles.
30.08	Practice infection control and contamination prevention.
30.09	Safely handle contaminated equipment and supplies.
30.10	Create and maintain sterile fields for dressings and minor surgery.
30.11	Prepare for minor surgical procedures including surgical hand wash and applying sterile gloves.
30.12	Remove sutures and staples.
30.13	Correctly dispose of contaminated materials.
31.0	Demonstrate minor treatments. – The student will be able to:
31.01	Perform minor treatments as directed by the physician including hot and cold therapy, (which includes, but is not limited to the following: hot water bag, heating pad, hot soaks and compresses, ice bag, cold compresses and packs).
31.02	Assist the physician with examination, treatment, and/or minor surgery.
31.03	Organize examination and treatment areas before, during, and after patient care.
31.04	Perform orthopedic procedures, including but not limited to the following: crutch measurements and instruction in use of canes, crutches, walkers, and wheelchairs.
31.05	Demonstrate the knowledge of casting procedures and supplies.
31.06	Apply all types of roller bandages using turns as appropriate.
31.07	Perform eye irrigations and instillations.

31.08	Perform ear irrigations and instillations.
32.0	Demonstrate knowledge of basic diagnostic medical assisting procedures. – The student will be able to:
32.01	Perform visual and auditory screening.
32.02	Perform spirometry.
32.03	Perform oximetry.
32.04	Assist in the performance of a pap and pelvic exam.
33.0	Demonstrate basic radiologic procedures. – The student will be able to:
33.01	Describe the basic operation of radiology equipment and accessories.
33.02	Describe how to maintain x-ray film files.
33.03	Describe computed and digital radiography systems.
33.04	Educate patients in preparation for radiological exams.
33.05	Demonstrate knowledge of ultrasound treatment.

**Course Number: MEA0530**  
**Occupational Completion Point: E**  
**Pharmacology for Medical Assisting – 90 Hours – SOC Code 31-9092**

34.0	Demonstrate knowledge of pharmaceutical principles and administer medications. – The student will be able to:
34.01	Identify commonly administered drugs, their uses, and effects.
34.02	Identify the major classifications of medications for each body system including, indications for use, side effects, and adverse reactions.
34.03	Use correct pharmaceutical abbreviations and terminology.
34.04	Identify various methods and routes of drug administration.
34.05	Instruct patients regarding self-administration of medications.
34.06	Calculate dosage and administer pharmaceuticals to correct anatomical sites, to correct patient, by correct route of administration, at the correct time, and document correctly.
34.07	Demonstrate knowledge of the legal and ethical standards related to the administration and the dispensing of drugs in the office setting under the doctor's supervision.

34.08	Demonstrate knowledge of emergency medications for first aid.
34.09	Identify the dangers and complications associated with drug administration
34.10	Recognize and report medication errors.
34.11	Demonstrate appropriate techniques to:
34.11.01	Prepare and administer non-parenteral medications (solid, liquids, and inhalers).
34.11.02	Prepare and administer parenteral medications.
34.11.03	Reconstitute powdered drugs.
34.11.04	Prepare injections from ampules and vials.
34.11.05	Apply the Seven Rights of Drug Administration

**Course Number: MEA0573**

**Occupational Completion Point: E**

**Laboratory Procedures – 125 Hours – SOC Code 31-9092**

35.0	Perform CLIA-waived diagnostic clinical laboratory procedures. -- The students will be able to:
35.01	Comply with safety signs, symbols, and labels.
35.02	Recognize signs and symptoms that may indicate to the physician a need for laboratory testing.
35.03	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as “CLIA waived” and the regulatory constraints on test performance.
35.04	Explain the methods of quality control for CLIA-waived testing, identify acceptable and unacceptable control results, and describe specific corrective action required when results are unacceptable.
35.05	Demonstrate proper technique for the collection of urine, capillary whole blood (finger/heel stick), culture material (throat/nasal swab) and other specimen types required for CLIA-waived tests.
35.06	Instruct patients in the proper collection of urine (clean catch, mid-stream), sputum, and stool specimens.
35.07	Perform CLIA-waived occult blood tests.
35.08	Perform CLIA-waived urinalysis testing including color and turbidity assessment and reagent test strips.
35.09	Perform CLIA-waived hematology tests (e.g. - hemoglobin, hematocrit).
35.10	Perform CLIA-waived chemistry tests (e.g. - glucose, cholesterol).

35.11	Perform CLIA-waived pregnancy tests.
35.12	Perform CLIA-waived infectious disease testing (e.g. – strep screen, mono test, influenza A/B).
36.0	Demonstrate knowledge of emergency preparedness and protective practices. -- The student will be able to:
36.01	Maintain and operate emergency equipment and supplies.
36.02	Participate in a mock environmental exposure event and document steps taken.
36.03	Explain an evacuation plan for a physician's office.
36.04	Maintain a current list of community resources for emergency preparedness.

<b>Course Number: MEA0506</b>	
<b>Occupational Completion Point: E</b>	
<b>Administrative Office Procedures– 90 Hours – SOC Code 31-9092</b>	
37.0	Perform administrative office duties. – The student will be able to:
37.01	Execute data management using Electronic Health Record (EHR) including, but not limited to, patient registration, appointment scheduling, charting, billing and insurance processing, procedure and diagnostic coding, ordering and monitoring patient testing, medication and prescription orders, keyboarding and correspondence, and performing an office inventory.
37.02	Execute non EHR data management including, but not limited to, selecting appropriate procedure and diagnostic codes, process insurance data and claims, develop and maintain billing and collection systems.
37.03	Perform various financial procedures, including, but not limited to, billing and collection procedures, payroll procedures, and checkbook procedures.
37.04	Demonstrate knowledge of management in a medical office including but not limited to personnel records, interviewing, various management styles, risk management, and conflict resolution.

<b>Course Number: MEA0942</b>	
<b>Occupational Completion Point: E</b>	
<b>Practicum Experience – 200 Hours – SOC Code 31-9092</b>	
<p>This “Practicum” experience is a supervised, unpaid activity of <b>a total of 200 hours</b> of which 160 contact hours must be in an ambulatory health care setting and no more than 40 hours in a simulated laboratory setting performing administrative and clinical procedures and must be completed prior to graduation. Students ready for the Practicum experience have completed all other program requirements and are eligible for this final phase in the program.</p> <p>The program should ensure that the experience and instruction of students are meaningful and parallel in content and concept with the material presented in lecture and laboratory sessions. Sites should be selected so that each student is afforded a variety of experiences, while at the same time all students are provided consistent learning opportunities.</p>	

This experience provides an opportunity for students to utilize both administrative and clinical skills learned in the Medical Assistant classroom and clinical environment in a local clinic, physician's office, or other health care facility.

The students Practicum should be performed in a professional environment under conditions of strict supervision and guidance of a licensed physician and clinical coordinator. An individual who has knowledge of the medical assisting profession must provide on-site supervision of the student. When performed in the stimulated laboratory all activities must be under the supervision of the medical assisting program/practicum coordinator or faculty. The content for any simulated laboratory activity will be at the discretion of each individual learning institution to best meet the need of its students.

The actual hands-on experiences will tie-in all the educational components based on theory and competency based instruction that the student learned in the laboratory and classroom setting.

This course is set to assess the student in their ability to utilize all critical thinking applications learned during the program and to apply these critical thinking skills during the Practicum experience. The healthcare facility and the learning college/institute will expect the student to utilize good work ethics, show excellent civic responsibilities, and further learn to both embrace and respect cultural diversity.

38.0 Perform administrative and general skills. – The student will be able to:

38.01 Understand proper and professional telephone technique.

38.02 Recognize and respond to verbal communication.

38.03 Recognize and respond to non-verbal communication.

38.04 Maintain confidentiality and adhere to HIPAA regulations.

38.05 Understand how to document manually and electronically appropriately.

38.06 Understand how to schedule appointments manually and electronically accurately.

38.07 Understand how to schedule inpatient and/or outpatient procedures accurately.

38.08 Greet patients courteously and professionally.

38.09 Demonstrate safety and quality assurance in the workplace.

39.0 Perform clinical and general skills. – The student will be able to:

39.01 Demonstrate aseptic hand washing technique.

39.02 Dispose of bio-hazardous waste in appropriate containers.

39.03 Adhere to sterilization techniques according to standards.



39.04	Practice standard precautions.
39.05	Stage patients and obtain vital signs.
39.06	Obtain patient histories.
39.07	Prepare and maintain examination and treatment area(s).
39.08	Prepare patient for examinations and/or minor office procedures.
39.09	Assist with examinations and/or minor office procedures.
39.10	Provide and document patient education.
40.0	Display professional work habits integral to medical assisting. – The student will be able to:
40.01	Communicate appropriately in healthcare settings by listening, writing, speaking and presenting with professional demeanor.
40.02	Collaborate, communicate and interact professionally with other healthcare professionals utilizing technology.
40.03	Contribute to team efforts by fulfilling responsibilities and valuing diversity.
40.04	Exercise proper judgment and critical thinking skills in decision making.
40.05	Adapt to changing organizational environments with flexibility.
40.06	Report as expected, on time, appropriately dressed and groomed and ready to work.
40.07	Model acceptable work habits as defined by company policy.
40.08	Complete and follow through on tasks using time management skills and take initiative as warranted.
40.09	Respond appropriately and quickly to patient's needs and concerns.
40.10	Practice etiquette and social sensitivity in face to face interaction, on the telephone and the Internet.
40.11	Actively adhere to policies and procedures that protect the patient's confidentiality and privacy.
40.12	Understand resources related to patients' healthcare needs.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

Although it is not required, it is strongly recommended that the programs meet the Standards and Guidelines of an Accredited Educational Program for the Medical Assistant adopted by the American Association of Medical Assistants and the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or the American Medical Technologist and the Accrediting Bureau of Health Education Schools (ABHES).

For further information contact:

#### **Commission on Accreditation of Allied Health Education Programs (CAAHEP)**

1361 Park Street  
Clearwater, FL 33756  
Phone: 727-210-2350  
Fax: 727-210-2354

#### **Accrediting Bureau of Health Education Schools (ABHES)**

777 Leesburg Pike, Suite 312  
N. Falls, VA 22043  
(703) 917-9503

This Program Will Also Be In Accordance With Florida Statute Medical Assistants, 458.3485 F.S.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Program completers of a CAAHEP or ABHES accredited program are eligible to take the American Association of Medical Assistants' Certification Examination (CMA) or the American Medical Technologists' Certification Examination (RMA). For further information contact:

American Association of Medical Assistants (AAMA)  
20 North Wacker Drive, Suite 1575  
Chicago, Illinois 60606 (312/899-1500)  
Or

American Medical Technologist (AMT)  
10700 West Higgins Road, Suite 150  
Rosemont, Illinois 60018 (800 275-1268)

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Medical Coder/Biller  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170529
CIP Number	0351071403
Grade Level	30, 31
Standard Length	1110 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians 29-2099 Health Technologists and Technicians, All Other
Basic Skills Level	Mathematics: 9 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The program is designed to prepare students for employment in a variety of health care settings as entry level coder, medical record coder, coding technician, or coding clerks, or medical coder/biller or SOC Code 29-2071(Medical Records and Health Information Technicians).

The content includes but is not limited to medical terminology, anatomy and physiology, coding systems, fundamentals of disease process including pharmacology, health care delivery systems, basics of medical records services, ethical and legal responsibilities, safety/security procedures, basic data processing, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HIM0009	Introduction to Health Information Technology	CER COD SP 7 G MED RECTEC 7G MED ASST 7G MED TRANS 7G	90 hours	29-2099
	HIM0091	Medical Coder/Biller I		350 hours	29-2071
B	HIM0092	Medical Coder/Biller II	350 hours		
	HIM0093	Medical Coder/Biller III	320 hours		

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of healthcare organizations and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Explore health informatics as an allied health profession.
- 04.0 Demonstrate an understanding of health data concepts.
- 05.0 Identify the functions of a health record.
- 06.0 Demonstrate an understanding of Health Information Technology.
- 07.0 Discuss classification systems, clinical vocabularies and terminologies.
- 08.0 Evaluate ethical issues in Health Information Professions.
- 09.0 Demonstrate compliance with laws, regulations, and standards that impact healthcare.
- 10.0 Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO).
- 11.0 Demonstrate computer knowledge and skills.
- 12.0 Demonstrate employability skills.
- 13.0 Describe the anatomy and physiology of the human body.
- 14.0 Demonstrate proficiency in the application of medical terminology.
- 15.0 Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology.
- 16.0 Demonstrate proficiency in the use of ICD and HCPCS/CPT coding systems, both manual and automated.
- 17.0 Perform coding complexities proficiently.
- 18.0 Explain the significance of health information services as it relates to the medical coder/biller.
- 19.0 Demonstrate professional and ethical behavior of a medical coder/biller.
- 20.0 Perform healthcare revenue cycle management processes.



Florida Department of Education  
Student Performance Standards

Program Title: Medical Coder/Biller  
Career Certificate Program Number: H170529

<b>Course Number: HIM0009</b>	
<b>Occupational Completion Point: A</b>	
<b>Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099</b>	
01.0	Demonstrate an understanding of the healthcare organizations and health occupations. – The student will be able to:
01.01	Discuss the evolution of healthcare.
01.02	Demonstrate an understanding of the infrastructure of healthcare in the United States.
01.03	Discuss healthcare regulatory agencies and organizations.
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
01.05	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills with meaningful feedback.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.
02.06	Demonstrate ability to create professional correspondence using appropriate email practices and etiquette.
02.07	Use appropriate medical terminology and abbreviations.
02.08	Model the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.09	Provide health information education to internal/external stakeholders.
02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic,

	ethnic, and religious groups.
	02.11 Distinguish between and identify subjective and objective information.
03.0	Explore health information as an allied health profession. – The student will be able to:
03.01	Discuss the history of health information management.
03.02	Discuss the professional opportunities within the health information professions.
03.03	Demonstrate knowledge of professional associations applicable to the field of health information.
04.0	Demonstrate an understanding of health data concepts. – The student will be able to:
04.01	Describe the various uses of primary and secondary health data and data sets.
04.02	Identify various characteristics of health data quality and standards.
05.0	Identify the functions of a health record. – The student will be able to:
05.01	Demonstrate an understanding of the various formats of the health record.
05.02	Explain the various uses of a health information as it relates to treatment, payment, and operations (TPO).
06.0	Demonstrate an understanding of Health Information Technology. – The student will be able to:
06.01	Discuss how changing regulations and technology impact the health information field.
06.02	Interpret information from health information systems and applications in healthcare.
06.03	Demonstrate an understanding of creation, use, storage, retrieval, and exchange of health data.
07.0	Discuss classification systems, clinical vocabularies and terminologies. – The student will be able to:
07.01	Explain the use of classification systems, clinical vocabularies, and terminologies as they relate to Health Information Management and nomenclatures.
08.0	Evaluate ethical issues in Health Information Professions. – The student will be able to:
08.01	Describe the code of ethics consistent with healthcare occupations.
08.02	Analyze ethical issues related to health information.
08.03	Manage ethical issues related to coding and billing/ healthcare documentation.
09.0	Demonstrate compliance with laws, regulations, and standards that impact healthcare. – The student will be able to:

09.01	Promote the importance of maintaining ethical and legal standards in compilation and usage of health information.
09.02	Identify all laws and standards that impact health information including the Health Insurance Portability and Accountability Act (HIPAA).
09.03	Explain the composition of the legal health record.
09.04	Apply health information policies and procedures for privacy, confidentiality, and security.
09.05	Articulate legal terms and processes that impact healthcare.
10.0	Apply policies, regulations, and standards to the management of information associated with treatment, payment, and operations (TPO). – The student will be able to:
10.01	Describe how to adapt workflow necessitated by regulatory change.
10.02	Demonstrate knowledge of policies and procedures for access and disclosure of protected health information to authorized users.
10.03	Adhere to appropriate and applicable accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills. – The student will be able to:
11.01	Demonstrate the ability to create, manage, organize, attach, and retrieve files.
11.02	Demonstrate ability to connect to and perform research on the internet by identifying reliable reputable websites.
11.03	Demonstrate proficiency in word processing, spreadsheets, and presentation software.
11.04	Demonstrate the ability to install software programs.
11.05	Demonstrate knowledge of safe computer practices and security procedures including but not limited to encryption, passwords and biometrics.
12.0	Demonstrate employability skills. – The student will be able to:
12.01	Identify and exemplify personal traits or attitudes desirable in a member of the healthcare team.
12.02	Model professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. courtesy and self-introductions).
12.03	Identify documents that may be required when applying for a job.
12.04	Perform the process to obtain employment: job search, cover letter, resume, application, and thank you letter.
<b>Course Number: HIM HIM0091</b>	
<b>Occupational Completion Point: B</b>	
<b>Medical Coder/Biller I – 350 Hours – SOC Code 29-2071</b>	
13.0	Describe the anatomy and physiology of the human body. – The student will be able to:

13.01	Describe the structure and function of the respiratory system.
13.02	Describe the structure and function of the circulatory system.
13.03	Describe the structure and function of the musculoskeletal & connective tissue system.
13.04	Describe the structure and function of nervous and sensory systems.
13.05	Describe the structure and function of the reproductive system.
13.06	Describe the structure and function of the urinary system.
13.07	Describe the structure and function of the digestive system.
13.08	Describe the structure and function of the endocrine system.
13.09	Describe the structure and function of the integumentary system.
13.10	Describe major psychiatric disorders.
14.0	Demonstrate proficiency in the application of medical terminology. – The student will be able to:
14.01	Identify word parts of medical terminology in daily use.
14.02	Build, spell and pronounce correctly, appropriate terms from word parts learned and be able to give the meaning of the word.
14.03	Identify word parts and be able to build, spell and understand new words with those parts.
14.04	Spell and use medical abbreviations.
14.05	Identify terminology specific to healthcare settings including surgical, medical, and therapeutic.
14.06	Apply medical reference sources.
15.0	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology. – The student will be able to:
15.01	Demonstrate an understanding of the predisposing factors and direct causes of disease as they relate to the human body.
15.02	Demonstrate an understanding of the general pathogenesis and morphology of disease and its role in the disease process.
15.03	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
15.04	Identify and use diagnostic test terminology.

**Course Number: HIM HIM0092**  
**Occupational Completion Point: B**  
**Medical Coder/Biller II – 350 Hours – SOC Code 29-2071**

16.0	Demonstrate proficiency in use of ICD and HCPCS/CPT coding systems, both manual and automated. – The student will be able to:
16.01	Apply conventions and guidelines used in coding.
16.02	Describe the process to update coding resources.
16.03	Assign and/or verify diagnosis, procedure, HCPCS level II codes, and applicable modifiers and groupings in accordance with official guidelines.
16.04	Utilize ICD-CM, ICD-PCS, CPT (all sections), and HCPCS Level II code sets to assign diagnosis and procedure codes to intermediate and advanced case studies and authentic health records/abstracts.
16.05	Describe components of revenue cycle management and clinical documentation improvement including quality indicators as it relates to coding.
16.06	Identify any discrepancies, incomplete information, and/or poor documentation practices in relation to coding while following appropriate departmental policies for correcting errors or improving documentation practices.
17.0	Perform coding complexities proficiently. – The student will be able to:
17.01	Apply advanced coding concepts to complex authentic health records/abstracts and/or case studies across the continuum of care.
17.02	Analyze case-mix, severity of illness systems, and coding quality monitors and reporting.
17.03	Utilize a variety of simulated patient records from across the continuum of care, interpret data, and assign and/or verify codes.
17.04	Analyze the various classification systems.
18.0	Explain the significance of health information services as it relates to the medical coder/biller. – The student will be able to:
18.01	Describe the functions of a health information management department and how this department interacts with the medical coder/biller.
18.02	Describe the development of the health record to include all types used in the current industry.
18.03	Explain the importance of the health record in relation to state and federal agencies, including compliance area.
<b>Course Number: HIM HIM0093</b>	
<b>Occupational Completion Point: B</b>	
<b>Medical Coder/Biller III – 320 Hours – SOC Code 29-2071</b>	
19.0	Demonstrate professional and ethical behavior of a medical coder/biller. – The student will be able to:
19.01	Explain the scope of work of the Medical Coder/Biller.
19.02	Demonstrate ethical coding practices as outlined by professional associations.
20.0	Perform healthcare revenue cycle management processes. – The student will be able to:
20.01	Prepare and submit applicable payer claims.

20.02	Analyze various payer types.
20.03	Perform patient accounting functions including claims, denials, rejections, appeals, collections, and payment resubmission using applicable software.
20.04	Describe characteristics of reimbursement methodology systems across the continuum of care.
20.05	Analyze charge master and superbill maintenance.
20.06	Understand compliance strategies and reporting as well as regulatory guidelines.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

Students should be encouraged to become members and participate in the activities of the professional organizations: American Health Information Management Association and/or American Academy of Procedural Coders.

About AHIMA Credentials:

Completers of the Medical Biller Coder program may take the Certified Coding Associate (CCA) credential exam as the first step in their coding career. The CCA is an entry-level credential that distinguishes new coders in the job market. Individuals with a CCA credential:

- Exhibit a level of commitment, competency, and professional capability usually absent in a newcomer to the field
- Demonstrate a commitment to the coding profession
- Distinguish themselves from non-credentialed coders and those holding credentials from other organizations less demanding of the higher level of expertise required to earn AHIMA certification.

The CCA should be viewed as the starting point for an individual entering a career as a coder. The AHIMA CCS and CCS-P exams demonstrate mastery level skills in coding. Most individuals challenge the CCS or CCS-P exams after two or more years of work experience in coding.

American Health Information Management Association

919 North Michigan Ave. Suite 2150  
Chicago, IL. 60611-5519  
312/233-1100

The American Academy of Professional Coders (AAPC) sponsors a certification exam for coders with expertise in physician-based settings which leads to the title of Certified Professional Coder (CPC) or Certified Professional Coder Hospital (CPC-H).

American Academy of Professional Coders  
309 West 700 South  
Salt Lake City, UT. 84101  
1-800-626-2633

**or**

The National Healthcare Association also offers a national certification examination for a Certified Billing and Coding Specialist (CBCS).

National Healthcareer Association  
7500 West 160<sup>th</sup> Street  
Stilwell, Kansas 66085  
800-499-9092

Outcomes 01- 12 are referred to as the Health Information Technology core and do not have to be completed if the students has previously completed the core in another program at any level. The Core should be taken first or concurrently with the first course in the program.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.



## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Nursing Assistant (Long-Term Care)  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170602
CIP Number	0351390200
Grade Level	30, 31
Standard Length	120 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1014 Nursing Assistants
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as nursing assistants, nursing aides, and orderlies, nurse aides in nursing homes or SOC Code 31-1014 Nursing Assistants

The content includes, but is not limited to, interpersonal skills, medical terminology, legal and ethical responsibilities, safe and efficient work, gerontology, nutrition, pet-facilitated therapy, health and safety including Cardio-pulmonary Resuscitation (CPR) – heart saver level, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 1 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	PRN0090	Nurse Aide and Orderly	REG NURSE 7 G LPN 7 G* PRAC NURSE @7 %7%G (Must be a Registered Nurse)	120 hours	31-1014

**\* The LPN 7 G district issued certification is a practical nurse. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator which must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.**

### Regulated Programs

Successful completion of this program from an approved school prepares the student for certification for employment as a Nursing Assistant in a nursing home, in accordance with Chapter 464.203, Florida Statutes. To be approved, this program must be supervised by a registered nurse and have follow the faculty qualifications set forth in 64B9-15.005 (3) (a) F.A.C.

New programs must be approved by the Board of Nursing, Department of Health prior to enrolling students.

Those students who satisfactorily complete an approved course are eligible to apply to take the national nursing assistant examination being utilized in Florida, in accordance with Chapter 464.203, F.S. This program includes both Acute and Long Term Care.

In accordance with 64B9-15.005 F.A.C., students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15.

In accordance with 64B9-15.006 F.A.C., Clinical and simulated laboratory learning experiences must correlate with 80 hours of didactic instruction. In addition, a minimum of 40 hours clinical experiences must be obtained. Simulated labs are not a substitute for all clinical experience. The clinical instruction shall include at least 20 hours of long term care clinical instruction in a licensed nursing home or licensed long term care facility. Simulated labs are allowed to be used for no more than 20 hours of clinical instruction.

In addition, Students must have a minimum of 16 hours of training in communication and interpersonal skills, infection control, safety/emergency procedures, promoting residents' independence, and respecting residents' rights prior to any direct contact with a resident.

According to Section 400.211, F.S., persons who are enrolled in, or have completed, a state approved nursing assistant training program may be employed by a licensed nursing facility for a period of four months. However, the certification requirements must be met within four months of such initial employment.

### **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate mathematics and science knowledge and skills.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities specific to nurse assisting.
- 04.0 Use information technology tools.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Demonstrate employability skills.
- 07.0 Provide emergency care.
- 08.0 Describe the anatomy and physiology of the human body.
- 09.0 Perform physical comfort and safety functions specific to nurse assisting.
- 10.0 Provide personal patient care.
- 11.0 Perform patient care procedures.
- 12.0 Apply principles of nutrition.
- 13.0 Provide care for geriatric patients.
- 14.0 Apply the principles of infection control specific to nursing assisting.
- 15.0 Provide biological, psychological, and social support.
- 16.0 Perform organizational skills following the patient care plan.
- 17.0 Assist with restorative (rehabilitative) activities.
- 18.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS

**Florida Department of Education  
Student Performance Standards**

**Program Title: Nursing Assistant (Long Term Care)  
Career Certificate Program Number: H170602**

**Course Number: PRN0090  
Occupational Completion Point: A  
Nursing Aides, Orderlies and Attendants –120 hours – SOC Code 31-1014**

01.0 Demonstrate mathematics and science knowledge and skills. -- The students will be able to:

01.01 Draw, read, and report on graphs, charts and tables.

01.02 Measure time, temperature, distance, capacity, and mass/weight.

01.03 Make, use and convert using both traditional and metric units.

01.04 Make estimations and approximations and judge the reasonableness of the result.

01.05 Convert from regular to 24 hour time.

01.06 Demonstrate ability to evaluate and draw conclusions.

01.07 Organize and communicate the results obtained by observation and experimentation.

01.08 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.

01.09 Calculate ratios.

02.0 Demonstrate the ability to communicate and use interpersonal skills effectively. -- The student will be able to:

02.01 Distinguish between factual reports and personal opinion.

02.02 Identify barriers to communication.

02.03 Use basic medical terminology and approved abbreviations.

02.04 Demonstrate effective interpersonal relationships.

02.05 Receive and give oral reports of a patient's status.

02.06 Report and record objective, pertinent observations, in written or oral form, observing legal guidelines.

02.07	Maintain current documentation.
02.08	Obtain specified data from patient and family.
02.09	Utilize verbal and written information to assist with the patient's plan of care.
02.10	Demonstrate use of the communication system.
02.11	Adapt communication skills to varied levels of understanding and cultural orientation.
02.12	Read and discuss technical material.
03.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. – The student will be able to:
12.01	Discuss and demonstrate legal and ethical behavior within the nursing assistant scope of practice including role limitations in Florida.
12.02	Describe the purpose of the chain of communication to resolve conflict.
12.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
12.04	Demonstrate safe standards of patient care including prevention and quality of care
12.05	Exhibit behavior supporting and promoting patients' and/or residents' rights.
12.06	Recognize potential for and prevention of medical errors.
12.07	Practice the proper procedures to follow regarding medical errors.
12.08	Follow policies and procedures affecting the health, safety, and well-being of patients.
12.09	Recognize and report signs of substance abuse.
12.10	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
12.11	Define Omnibus Budget Reconciliation Act (OBRA).
12.12	Define Minimum Data Set (MDS).
04.0	Use information technology tools. -- The students will be able to:
04.01	Employ computer operations applications to access, create, manage, integrate, and store information.
05.0	Recognize and practice safety and security procedures. -- The students will be able to:
05.01	Recognize safe and unsafe working conditions and report safety hazards.

05.02	Demonstrate the safe use of medical equipment.
05.03	Explain and apply the theory of root- cause analysis.
05.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
05.05	Identify and practice security procedures for medical supplies and equipment.
05.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
05.07	Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols, and labels.
05.08	Demonstrate proper body mechanics and ergonomics.
05.09	Demonstrate the procedure for properly identifying patients.
05.10	Demonstrate procedures for the safe transport and transfer of patients.
05.11	Describe fire, safety, disaster and evacuations procedures.
05.12	Discuss The Joint Commission patient safety goals ( <a href="http://www.jointcommission.org">www.jointcommission.org</a> ).
06.0	Demonstrate employability skills. -- The students will be able to:
06.01	Conduct a job search and secure information about a job.
06.02	Identify documents that may be required when applying for a job.
06.03	Complete a job application.
06.04	Demonstrate competence in job-interview techniques.
06.05	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
06.06	Demonstrate knowledge of how to make job changes appropriately.
06.07	Demonstrate acceptable employee health habits.
07.0	Provide emergency care. -- The student will be able to:
07.01	Obtain and maintain training or certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid for infant, child and adult.
07.02	Identify emergency evacuation procedures.
08.0	Describe the anatomy and physiology of the human body. -- The student will be able to:



08.01	Describe the basic structure and function of body systems.
08.02	Describe the relationships of body systems in providing patient care.
08.03	Recognize abnormal signs and symptoms of common diseases and condition.
09.0	Perform physical comfort and safety functions specific to nurse assisting. – The student will be able to:
09.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
09.02	Maintain safe patient units, equipment, and a comfortable environment.
09.03	Maintain service areas on the units including supplies and equipment.
09.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
09.05	Demonstrate adjustment of bed and side-rails according to facility policy.
09.06	Demonstrate and assist patient to dangle.
09.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
09.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
09.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
09.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
09.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
09.12	Assist patient with care and use of prosthetic/orthotic devices.
09.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
10.0	Provide personal patient care. -- The student will be able to:
10.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.
10.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.
10.03	Administer back rub with bath and as needed.
10.04	Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.
10.05	Demonstrate the use of a safety and/or electric razor to shave the patient.

10.06	Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.
10.07	Assist with and/or administer oral hygiene including denture care.
10.08	Assist patient to dress.
10.09	Assist patient with toileting using various types of restorative and rehabilitative equipment.
10.10	Assist patient with use of bedpan (standard and fracture)
10.11	Assist with bowel and bladder training.
10.12	Assist and/ or provide perineal care.
10.13	Empty, measure and record urinary output and/or drainage.
10.14	Demonstrate application and use of a leg bag, leg strap and dignity bag.
10.15	Monitor and assist with the drainage of urostomy bags and colostomy bags.
10.16	Assist patient with both donning and doffing prosthesis and brace.
10.17	Assist patient with meals.
10.18	Describe the relationships of body systems when providing patient care.
10.19	Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.
11.0	Perform patient care procedures. – The student will be able to:
11.01	Demonstrate ability to accurately measure, record and report vital signs.
11.02	Assist with the admission of a patient and/or resident.
11.03	Assist with the admission, transfer, and discharge of a patient and/or resident.
11.04	Maintain patient-belongings list.
11.05	Make unoccupied/occupied bed.
11.06	Provide passive range-of-motion exercises.
11.07	Apply anti-embolic hose and sequential compression devices.
11.08	Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.

11.09	Record fluid intake and output (I&O).
11.10	Observe, record, and report patient's emesis.
11.11	Monitor and provide urinary catheter care and drainage systems.
11.12	Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.
11.13	Collect stool specimen.
11.14	Assist with the collection of a sputum specimen.
11.15	Assist the nurse with care of the patient with complex medical needs.
11.16	Assist patient to apply binders.
11.17	Care for patient in skin and skeletal traction.
11.18	Assist with pre-operative and post-operative patient care.
11.19	Reinforce dressings under the supervision of the RN/LPN.
11.20	Obtain and record an apical pulse.
11.21	Provide cast care and/or pin care.
11.22	Provide care for eyeglasses, artificial eyes, and contact lens.
12.0	Apply principles of nutrition. – The student will be able to:
12.01	Identify nutrients and food groups.
12.02	Develop a basic food plan.
12.03	Describe special diets.
12.04	Check patient's diet tray for accuracy.
12.05	Monitor and document Nutritional Intake.
12.06	Identify and implement regional, cultural and religious food guidelines/preferences.
12.07	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
12.08	Identify methods of maintaining fluid balance including encouraging and restricting fluids.

13.0	Provide care for geriatric patients. – The student will be able to:
13.01	Identify and assist with methods and procedures to prevent pressure ulcers.
13.02	Identify and assist with methods to prevent falls in the elderly.
13.03	Identify and assist with safety principles as related to the elderly.
13.04	Describe general characteristics, particular needs, and age related changes of the elderly.
13.05	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
13.06	Distinguish between fact and fallacy about the aging process.
13.07	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.
13.08	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimer's.
13.09	Provide and involve patients in diversional activities.
13.10	Identify common alterations in elderly patient behavior.
13.11	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
13.12	Demonstrate awareness of common behaviors in drug use and abuse in the elderly.
13.13	Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.
13.14	Identify the need for community resources and services available to the elderly and their caregiver.
13.15	Identify components of the grief process.
13.16	Demonstrate an understanding of end of life care, hospice and palliative care.
14.0	Apply the principles of infection control specific to nursing assisting. – The student will be able to:
14.01	Discuss transmission-based precautions.
14.02	Identify the chain of infection.
14.03	Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.
14.04	Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
14.05	Follow isolation procedure with food tray, PPE, and other supplies/equipment.

14.06	Collect specimen from patient in isolation.
15.0	Provide biological, psychological, and social support. – The student will be able to:
15.01	Discuss family roles and their significance to health.
15.02	Respond to patient and family emotional needs.
16.0	Perform supervised organizational functions, following the patient care plan. – The student will be able to:
16.01	Organize and prioritize patient-care assignments.
16.02	Complete assignments accurately and in a timely manner.
17.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
17.01	List the purposes of restorative (rehabilitation) program.
17.02	Assist patient with specified restorative (rehabilitation) needs.
17.03	Assist patients/residents to reach the optimum level of independence.
18.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. -- The student will be able to:
18.01	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens.
18.02	Identify community resources and services available to individuals with diseases caused by blood borne pathogens.
18.03	Identify "at risk" behaviors that promote the spread of aids and the public education needed to combat the spread of diseases caused by blood borne pathogens.
18.04	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following center for disease control (CDC) guidelines.
18.05	Demonstrate knowledge of the legal aspects of aids, including testing.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

The length of this program is 120 hours. Completion of this program should enable the postsecondary student to be given advanced standing in the Patient Care Technician program but will require additional evaluation and competencies to enter at the level of OCP A.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Home Health Aide  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170604
CIP Number	0351260200
Grade Level	30, 31
Standard Length	165 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1011 Home Health Aides 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as a home attendant, or home health aide (SOC Code 31-1011) or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes, but is not limited to, instruction in those supportive services that are required to provide and maintain bodily and emotional comfort and to assist the patient toward independent living in a safe environment, as stated in Rules of the Department of Health - Minimum Standards for Home Health Agencies. Additional content areas to be included are: legal and ethical responsibilities; communication skills; basic human needs; a safe, clean, and healthy home environment; the developmental process; nutritional needs; emergency care; personal care; special care and rehabilitation needs of the client; household management; record-keeping; pet facilitated therapy; and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.



## Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G LPN 7 G	90 hours	31-9099
B	HCP0330	Home Health Aide	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-1011

## Regulated Programs

Basic infection control, first aid, cardio- pulmonary resuscitation (CPR) heart saver level, vital signs, home-care skills and client care skills are integral parts of this program. Clinical experiences, where the student may practice, demonstrate and perform the procedures associated with bedside client care, are an appropriate part of this program.

**Please refer to 42CFR§484.36 for the clinical requirements for the Home Health Aide program.**

Section 59A-8.0095 Home Health Aide, Administrative Rules, Department of Health and Rehabilitative Services contain much valuable information for program planning. These rules require that if the Home Health Aide receives training through a vocational school where professional standards have been established in accordance with the State Board of Education, a certificate of successful completion shall be on file with the employer.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use verbal and written communications specific to Home Health Aide.
- 13.0 Demonstrate legal and ethical responsibilities specific to Home Health Aide.
- 14.0 Perform physical comfort and safety functions specific to Home Health Aide.
- 15.0 Provide personal patient care.
- 16.0 Perform patient care procedures.
- 17.0 Apply principles of nutrition.
- 18.0 Provide care for geriatric patients.
- 19.0 Apply the principles of infection control specific to Home Health Aide.
- 20.0 Provide bio-psycho-social support.
- 21.0 Prioritize and perform functions following the patient care plan.
- 22.0 Assist with rehabilitative activities.
- 23.0 Perform home health-care services.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Home Health Aide  
Career Certificate Program Number: H170404**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HCP0330  
Occupational Completion Point: B  
Home Health Aide – 75 Hours – SOC Code 31-1011**

12.0	Use verbal and written communications specific to home health aide. – The student will be able to:
12.01	Obtain specified data from patient and family.
12.02	Utilize verbal and written information to assist with the patient's care plan.
13.0	Demonstrate legal and ethical responsibilities specific to home health aide. – The student will be able to:
13.01	Demonstrate legal and ethical behavior within the role and scope of home health aide responsibilities.
13.02	Follow policies and procedures concerning care as directed by the employer affecting the health, safety, and well-being of patients in the home setting.
13.03	Recognize and report signs of abuse, physical verbal, and substance.
13.04	Follow legal guidelines in documentation.
13.05	Exhibit behavior supporting and promoting residents' rights.
13.06	Recognizes and follows scope of proactive and role limitations for a home health aide.
14.0	Perform physical comfort and safety functions specific to home health aide. – The student will be able to:

14.01	Maintain a clean and safe home environment for the patient.
14.02	Adjust bed and/or side-rails.
14.03	Transfer patient with mechanical lift using proper body mechanics and patient safety measures.
14.04	Demonstrate proper turning and positioning according to care plan.
14.05	Implement fall prevention measures as directed, i.e. clutter free pathways, locked wheelchair, etc.
14.06	Apply supportive comfort devices as directed (e.g. footboard, over-bed cradle, alternating pressure mattress).
14.07	Demonstrate and assist patient to dangle.
14.08	Assist patient in ambulation, including the use of crutch, cane, or walker.
14.09	Demonstrate the proper wheel chair safety technique and assist the patient as needed with use.
14.10	Assist patient with care and use of prosthetic/orthotic devices.
14.11	Describe emergency evacuation procedures with adaptations to the home setting.
14.12	Implement appropriate regulatory and accrediting agency patient safety guidelines.
15.0	Provide personal patient care. – The student will be able to:
15.01	Perform bed bath; observe and report changes in a patient.
15.02	Perform back rub.
15.03	Demonstrate procedures for safety in the bathroom including the use of adaptive shower equipment such as shower chairs, long handled bath sponge, grab bars, extended shower hose, rubber mat in tub or shower, and rubber based rug outside the shower.
15.04	Assist with shower or tub bath, including use of specialty tubs.
15.05	Assist patient with sink, tub, shower, shower cap, or bed shampoo.
15.06	Demonstrate the use of a safety and/or electric razor to shave the patient.
15.07	Demonstrate how to groom patient, including hair, skin, foot, and nail care.
15.08	Assist with and/or administer oral hygiene, including denture care.
15.09	Assist patient with toileting, using various types of restorative and rehabilitative equipment.
15.10	Assist patient to dress.

15.11	Assist patient with meals.
16.0	Perform patient care procedures. – The student will be able to:
16.01	Make unoccupied/occupied bed.
16.02	Provide passive range-of-motion exercises.
16.03	Apply anti-embolic hose and sequential compression devices.
16.04	Understand and demonstrate proper collection of urine, strained, timed urine, and/or routine urine specimen.
16.05	Observe skin while bathing for allergic reaction to catheter or any leaking.
16.06	Monitor fluid intake and output (I&O), including encouraging and restricting fluids.
16.07	Observe, record, and report patient's emesis.
16.08	Assist with ostomy care and alert nurse of any unusual observations while performing skin care.
16.09	Collect stool specimen and alert nurse of unusual odors, colors, or character.
16.10	Care for patients receiving oxygen therapy making sure patient receives correct flow of oxygen.
17.0	Apply principles of nutrition. – The student will be able to:
17.01	Identify nutrients and food groups.
17.02	Identify and implement regional, cultural, and religious food guidelines/preferences.
17.03	Describe special diets.
17.04	List factors that must be considered when purchasing food.
17.05	Follow the prescribed basic food plan.
17.06	List factors that must be considered when storing food.
17.07	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
17.08	Identify methods of food preparation.
17.09	Discuss preparation and serving of trays in the home.
18.0	Provide care for geriatric patients. – The student will be able to:

18.01	Identify safety principles as related to the elderly.
18.02	Describe general characteristics, particular needs, and problems of the elderly.
18.03	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
18.04	Distinguish between fact and fallacy about the aging process.
18.05	Identify community resources and services available to the elderly and their caregiver.
18.06	Apply reality orientation techniques and validation therapy.
18.07	Provide and involve patients in diversional activities.
18.08	Identify common alterations in elderly patient behavior or health status and follow up within the home health aide scope of performance.
18.09	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).
19.0	Apply the principles of infection control specific to home health aide. – The student will be able to:
19.01	Provide care for patients with infectious diseases in the home.
19.02	Follow isolation procedures with food tray, personal protective equipment (PPE), supplies/equipment, and other materials in the home.
19.03	Utilize standard precautions in all home care.
19.04	Discuss transmission-based precautions.
20.0	Provide bio-psycho-social support. – The student will be able to:
20.01	Discuss family roles and their significance to health.
20.02	Respond to patient and family emotional needs.
21.0	Prioritize and perform functions following the patient care plan. – The student will be able to:
21.01	Organize patient-care assignments.
21.02	Complete assignments accurately and in a timely manner per care plan.
22.0	Assist with rehabilitative activities. – The student will be able to:
22.01	List the purposes of restorative (rehabilitation) programs.
22.02	Assist patient with specified restorative (rehabilitation) needs.

22.03	Assist patients/residents to reach the optimum level of independence.
23.0	Perform home health-care services. – The student will be able to:
23.01	Establish and follow a collaborative care plan with patient and family.
23.02	Perform patient-related cleaning tasks and laundry per care plan.
23.03	Identify methods for medication storage.
23.04	Assist patient with taking self-administered prescribed medication in the home, and identify possible side effects and emergency procedures for adverse reactions in accordance with F.A.C. 59A-8.0095.
23.05	Demonstrate how to utilize equipment and supplies in the home.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs occurs through vocational classroom instruction and applied laboratory procedures or practice.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal; therefore, the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Practical Nursing  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170607
CIP Number	0351390101
Grade Level	30, 31
Standard Length	1350 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2061 Licensed Practical and Licensed Vocational Nurses 31-1014 Nursing Assistants
Basic Skills Level	Mathematics: 11 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as Licensed Practical Nurses (SOC 29-2061). The program must be approved by the Florida State Board of Nursing in order for graduates to apply to take the examination to practice as a Licensed Practical Nurse.

The content includes, but is not limited to, theoretical instruction and clinical experience in medical, surgical, obstetric, pediatric, and geriatric nursing; theoretical instruction and clinical experience in acute, care, long term care and community settings; theoretical instruction and clinical application of vocational role and function; personal, family and community health concepts; nutrition; human growth and development over the life span; body structure and function; interpersonal relationship skills, mental health concepts; pharmacology and administration of medications; legal aspects of practice; and current issues in nursing.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses that have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	PRN0098	Practical Nursing Foundations 1	REG NURSE 7 G LPN 7 G * PRAC NURSE @7 (Must be a Registered Nurse)	300 hours	31-1014
B	PRN0099	Practical Nursing Foundation 2	REG NURSE 7 G PRAC NURSE @7 (Must be a Registered Nurse)	300 hours	29-2061
	PRN0290	Medical Surgical Nursing 1		300 hours	29-2061
	PRN0291	Medical Surgical Nursing 2		300 hours	29-2061
	PRN0690	Comprehensive Nursing and Transitional Skills		150 hours	29-2061

***\* The LPN 7 G district issued certification is a practical nurse. This certification can only be utilized in the PRN0098 course when the program is an approved nursing assistant program with the Florida Board of Nursing to teach concepts, skills and experiences solely at the Certified Nursing Assistant level and scope. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator who must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.***

**Regulated Programs**

Please refer to Florida Statute 464.019 (1) (b) for faculty credential requirements to teach this program.

Students are eligible to apply to take the national licensing examination after satisfactory completion of an approved program. Licensure Examination for Practical Nurses, CAT NCLEX-PN is a computer-administered examination that the nursing graduate must take and pass in order to practice as a Licensed Practical Nurse.

Program must comply with the State Board of Nursing rules, including faculty qualifications. For questions regarding this process, please contact: Board of Nursing, 4052 Bald Cypress Way, Tallahassee, FL 32399-3752.

An approved licensed practical nurse supervisory education course can only be taken following completion of this program, and after licensure. The Graduate must have 6 months clinical experience before supervising as well as meeting all other criteria listed in 64B9-16.002.

A Licensed Practical Nurse working in a nursing home shall qualify to supervise by meeting all of the requirements in 64B9-16.002 (FS). The Supervisory course applicant must have no less than six months clinical nursing experience as an LPN. The supervisory course must be approved by the Board of Nursing, and must be a minimum of 30 hours in length.

Clinical instruction of nursing students will meet the requirements of Florida Statute 464.019. Clinical experience must make up at least 50% of the total program. Simulated practice and clinical experiences are included as an integral part of this program. Clinical Simulation may be used for no more than 50% of the total clinical experience.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Recognize and practice safety, security and emergency procedures.
- 03.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 04.0 Perform patient and personal care as it pertains to the practical nurse.
- 05.0 Provide patient-centered care for the geriatric population.
- 06.0 Assist with restorative (rehabilitative) activities.
- 07.0 Demonstrate organizational functions, following the patient plan of care.
- 08.0 Demonstrate computer literacy as related to nursing functions.
- 09.0 Use appropriate verbal and written communications in the performance of nursing functions.
- 10.0 Demonstrate legal and ethical responsibilities specific to the nursing profession.
- 11.0 Apply the principles of infection control, utilizing nursing principles.
- 12.0 Perform aseptic and sterile techniques.
- 13.0 Describe the structure and function of the human body in relation to health and disease.
- 14.0 Apply principles of nutrition as it relates to Practical Nursing Scope of Practice.
- 15.0 Describe human growth and development across the lifespan.
- 16.0 Demonstrate the performance of nursing procedures.
- 17.0 Demonstrate how to administer medication.
- 18.0 Demonstrate how to provide bio-psycho-social support.
- 19.0 Demonstrate healthy lifestyle responsibility specific to personal health maintenance.
- 20.0 Implement education and resources for family wellness.
- 21.0 Participate in Community Health Awareness Forums.
- 22.0 Demonstrate how to care for the surgical patient with a Cardiovascular, Respiratory, Lymphatic, Musculoskeletal, Endocrine or Integumentary disease/disorder.
- 23.0 Demonstrate how to care for pre-operative and post-operative patients, utilizing nursing principles.
- 24.0 Demonstrate how to care for the surgical patient with a Gastrointestinal, Neurological, Urinary, Reproductive or Oncologic disease/disorder.
- 25.0 Demonstrate how to care for maternal/newborn patients, utilizing nursing principles.
- 26.0 Demonstrate knowledge of SIDS/ SUIDS as it relates to the practical nursing role.
- 27.0 Demonstrate how to care for pediatric patients, utilizing nursing principles.
- 28.0 Develop transitional skills.
- 29.0 Demonstrate employability skills specific to practical nursing.

Please Note: The following outcomes can only be taken by practical nurses who have graduated from their practical nursing program. The LPN/IV education must be sponsored by a provider of continuing education courses approved by the Board of Nursing pursuant to Rule 64B9. To be qualified to teach this module, the instructor must be a currently Florida licensed Registered Nurse with teaching experience and nursing experience which includes IV therapy. The provider will be responsible for issuing a certificate verifying the requisite number of hours and course content.

In accordance with Rule 64B9 12.005, the module cannot be less than 30 hours post-graduate level. These outcomes must be followed by supervised clinical practice as needed to demonstrate clinical competence. Verification of competence shall be the responsibility of each employing institution. Such verification shall be given through a signed statement of a Florida licensed registered nurse.

### **LPN/IV**

- 01.0 Explain the legal aspects of IV administration by practical nurses to include the policies and procedures of the institution and appropriate documentation.
- 02.0 Demonstrate knowledge of the peripheral veins used for venipuncture.
- 03.0 Perform a venipuncture.
- 04.0 Discuss the effect of IV therapy on the body.
- 05.0 Recognize and respond to adverse reactions to IV therapy.
- 06.0 Recognize and use various types of IV equipment.
- 07.0 Administer drugs intravenously.
- 08.0 Care for patients receiving IV drug therapy, blood and blood components, and/or parenteral nutrition.
- 09.0 Describe and utilize the principles of infection control in IV therapy.
- 10.0 Manage special IV therapy procedures.
- 11.0 Recognize terminology pertinent to IV therapy.
- 12.0 Care for the patient receiving IV therapy via central lines.



Florida Department of Education  
Student Performance Standards

Program Title: Practical Nursing  
Career Certificate Program Number: H170607

**Career Certificate Program Course Number: PRN0098**  
**Occupational Completion Point: A**  
**Practical Nursing Foundations 1 – 300 Hours – SOC Code 31-1014**

01.0	Demonstrate knowledge of the healthcare delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the healthcare delivery system including public, private, government and non-profit.
01.02	Identify common methods of payment for healthcare services.
01.03	Describe the various types of healthcare providers and the range of services available.
01.04	Describe the composition and functions of a healthcare team.
01.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
01.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.07	Identify characteristics of effective teams.
01.08	Recognize methods for building positive team relationships.
01.09	Analyze attributes and attitudes of an effective leader.
01.10	Recognize factors and situations that may lead to conflict.
01.11	Demonstrate effective techniques for managing team conflict.
01.12	Describe factors that influence the current delivery system of healthcare.
01.13	Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0	Recognize and practice safety, security and emergency procedures. – The student will be able to:
02.01	Recognize safe and unsafe working conditions and report safety hazards.
02.02	Demonstrate the safe use of medical equipment.

02.03	Explain and apply the theory of root- cause analysis.
02.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
02.05	Identify and practice security procedures for medical supplies and equipment.
02.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.
02.07	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.
02.08	Demonstrate proper body mechanics and ergonomics.
02.09	Demonstrate the procedure for properly identifying patients.
02.10	Demonstrate procedures for the safe transport and transfer of patients.
02.11	Describe fire, safety, disaster, active shooter, and evacuations procedures.
02.12	Discuss The Joint commission patient safety goals ( <a href="http://www.jointcommission.org">www.jointcommission.org</a> ) and any other applicable accrediting/regulatory agency guidelines.
02.13	Describe legal parameters relating to the administration of emergency care.
02.14	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
03.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
03.01	Recognize emerging diseases and disorders.
03.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens.
03.03	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
03.04	Identify “at risk” behaviors, which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
03.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.
03.06	Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.
04.0	Perform patient and personal care as it pertains to the practical nurse. -- The student will be able to:
04.01	Demonstrate ability to accurately measure, document, and report vital signs.
04.02	Lift, hold, and transfer patients including the use of the various assistive devices and equipment, utilizing proper body mechanics and patient safety measures.

04.03	Provide basic nursing care.
04.04	Perform patient hygiene care.
04.05	Assist patient with activities of Daily Living (ADL) including: 04.05.01 dressing 04.05.02 meals 04.05.03 bowel and bladder training 04.05.04 perineal/catheter care 04.05.05 make unoccupied/occupied bed 04.05.06 passive range of motion exercises
04.06	Assist patient with both donning and doffing prosthesis and brace.
04.07	Demonstrate care for eyeglasses, prosthetic eyes, and contact lens.
05.0	Provide patient-centered care for the geriatric population. -- The student will be able to:
05.01	Incorporate professional attitudes, values, and expectations about physical and mental aging in the provision of patient-centered care for older adults and their families.
05.02	Identify barriers for older adults in receiving, understanding, and giving of information.
05.03	Use valid and reliable assessment performed by registered nurse/LPN to guide nursing practice for older adults.
05.04	Recognize safe living environments as it relates to functional, physical, cognitive, psychological, and social needs of older adults.
05.05	Assist older adults and their support network to achieve personal goals, based on the analysis of the living environment and availability of community resources.
05.06	Identify actual or potential mistreatment (physical, mental or financial abuse, and/or self-neglect) in older adults and report appropriately.
05.07	Implement strategies and use online guidelines to prevent and/or identify and manage geriatric syndromes.
05.08	Recognize and respect the variations of care, the increased complexity, and the increased use of healthcare resources inherent in caring for older adults.
05.09	Recognize the complex interaction of acute and chronic co-morbid physical and mental conditions and associated treatments common to older adults.
05.10	Discuss models of care that promote safe, quality physical and mental health care for older adults such as PACE, NICHE, Guided Care, Culture Change, and Transitional Care Models.
05.11	Facilitate ethical, non-coercive decision making by older adults and/or families/caregivers for maintaining everyday living, receiving treatment, initiating advance directives, and implementing end-of-life care.
05.12	Assist registered nurse to promote adherence to the evidence-based practice of providing restraint-free care (both physical and chemical restraints).
05.13	Demonstrate leadership and communication techniques that foster discussion and reflection on the extent to which diversity (among nurses, nurse assistive personnel, therapists, physicians, and patients) has the potential to impact the care of older adults.

05.14	Facilitate safe and effective transitions across levels of care, including acute, community-based, and long-term care (e.g., home, assisted living, hospice, skilled nursing facility) for older adults and their families.
05.15	Provide patient-centered care with consideration for mental and physical health and well-being of informal and formal caregivers of older adults.
05.16	Advocate for timely and appropriate palliative and hospice care for older adults with physical and cognitive impairments.
05.17	Implement and monitor strategies to prevent risk and promote quality and safety (e.g., falls, medication mismanagement, pressure ulcers) in the nursing care of older adults with physical and cognitive needs.
05.18	Utilize resources/programs to promote functional, physical, and mental wellness in older adults.
05.19	Identify relevant theories and concepts related to the delivery of patient-centered care for older adults.
05.20	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis (Alzheimer's or dementia).
05.21	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimer's.
05.22	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
05.23	Demonstrate awareness of common behaviors in substance use and abuse in the elderly.
05.24	Report concerns to the nurse related to substance use and abuse in the elderly patient.
05.25	Identify components of the grief process as it relates the geriatric patient.
05.26	Identify factors predisposing aging adults for suicide.
06.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
06.01	List the purposes of restorative (rehabilitation) program.
06.02	Assist patient with specified restorative (rehabilitation) needs.
06.03	Assist patients/residents to reach the optimum level of independence.
07.0	Demonstrate organizational functions, following the patient plan of care. – The student will be able to:
07.01	Organize patient-care assignments.
07.02	Complete assignments accurately and in a timely manner.
08.0	Demonstrate computer literacy as related to nursing functions. – The student will be able to:
08.01	Demonstrate effective use of technology, including use of electronic medical records and email relevant to job requirements for a Licensed Practical Nurse.

08.02	Identify computer skills utilized for each clinical rotation and apply, as appropriate.
08.03	Identify methods of communication to access and distribute data such as fax, e-mail, and internet as applicable to HIPAA.
09.0	Use appropriate verbal and written communications in the performance of nursing functions. – The student will be able to:
09.01	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
09.02	Respond to verbal and non-verbal cues.
09.03	Use approved medical terminology and abbreviations.
09.04	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
09.05	Receive and give oral report using safe handoff of patient's status.
09.06	Report and record objective and subjective pertinent observations.
09.07	Maintain current documentation.
09.08	Document changes in patient behavior and mental awareness in a timely manner.
09.09	Obtain specified data from patient and family.
09.10	Define and explain the steps in the nursing process and the role of the licensed practical nurse in that process.
09.11	Utilize nursing principles to assist with the patient's plan of care.
10.0	Demonstrate legal and ethical responsibilities specific to the nursing profession. – The student will be able to:
10.01	Explain the “Patient's Bill of Rights”.
10.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
10.03	Describe advance directives.
10.04	Describe informed consent.
10.05	Recognize and report all forms of abuse to include domestic violence (physical & verbal), neglect, and human trafficking.
10.06	Identify the components of the Nurse Practice Act.
10.07	Practice within the role and scope of the job description.
10.08	Discuss medical errors related to the practical nurse.

10.09	Define legal aspects and code of ethics related to nursing.
10.10	Describe the practical nurses' role in delegation of duties.
10.11	Follow policies and procedures affecting the health, safety, and well-being of patients.
10.12	Follow legal guidelines in charting, including use of electronic medical records
11.0	Apply the principles of infection control, utilizing nursing principles. – The student will be able to:
11.01	Provide care for patients with infectious diseases applying the principles of “standard precautions” utilized with all patients as well as special procedures required.
11.02	Perform and promote effective hand hygiene.
11.03	Set up isolation unit using proper personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
11.04	Follow isolation procedure with food tray, garments, and other materials.
11.05	Collect specimen from patient in isolation.
11.06	Identify common hospital acquired infections and their prevention and treatment.
11.07	Identify emergent communicable diseases and their prevention and treatment.
11.08	Apply interventions to break each chain of infection.
11.09	Discuss immunity and the role of immunizations.
11.10	Discuss nursing responsibilities related to biological exposures.
12.0	Perform aseptic and sterile techniques. – The student will be able to:
12.01	Apply principles of medical and surgical asepsis.
12.02	Apply and remove sterile glove.
12.03	Apply sterile dressing.
12.04	Open sterile equipment and supplies.
12.05	Maintain sterile field.
12.06	Clean and disinfect equipment.
12.07	Apply and remove personal protective equipment (PPE).

13.0	Describe the structure and function of the human body in relation to health and disease. – The student will be able to:
13.01	Describe the relationships of body systems to health and disease as it relates to patient care.
13.02	Describe the structure and function of the respiratory system.
13.03	Describe the structure and function of the cardio-vascular system including lymph and immune response.
13.04	Describe the structure and function of the muscular-skeletal system.
13.05	Describe the structure and function of the nervous, skin, and sensory systems.
13.06	Describe the structure and function of the reproductive system.
13.07	Describe the structure and function of the urinary system.
13.08	Describe the structure and function of the digestive system.
13.09	Describe the structure and function of the endocrine system.
14.0	Apply principles of nutrition as it relates to practical nursing scope of practice. – The student will be able to:
14.01	Explore and utilize the U.S. Department of Agriculture’s MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> ).
14.02	Explain regional, cultural, and religious food references.
14.03	Prepare a basic food plan.
14.04	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
14.05	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
14.06	Monitor and document nutritional intake.
14.07	Assist patient with and maintain therapeutic diets.
14.08	Describe the nutrients, their sources and significance in promoting health.
14.09	List factors which must be considered when purchasing food.
14.10	List factors which must be considered when storing food safely.
14.11	Identify methods of safe food preparation.

**Career Certificate Program Course Number: PRN0099**  
**Occupational Completion Point: B**  
**Practical Nursing Foundations 2 – 300 Hours – SOC Code 29-2061**

15.0	Describe human growth and development across the lifespan. – The student will be able to:
15.01	Describe characteristics of growth and development from conception to birth.
15.02	Describe characteristics of growth and development from birth through preschool.
15.03	Describe characteristics of growth and development from school age through adolescence.
15.04	Describe characteristics of growth and development of the adult through the life span.
15.05	Identify components of the grief process across the lifespan.
16.0	Demonstrate the performance of nursing procedures (which can be accomplished through a combination of simulation, laboratory and clinical settings in accordance with F.S.464.019). – The student will be able to:
16.01	Perform data collection.
16.02	Apply hot and cold applications.
16.03	Assist patient with sitz bath.
16.04	Describe and demonstrate how to monitor patient's pre and post special procedures (e.g. I.V.P., myelogram, MRI, CAT scan).
16.05	Apply bandage as appropriate.
16.06	Perform clean and sterile dressing changing procedures.
16.07	Insert straight/indwelling catheter.
16.08	Obtain specimen from patient with indwelling catheter.
16.09	Remove indwelling catheter.
16.10	Demonstrate how to assist with physical examination.
16.11	Assist patient with diagnostic procedures.
16.12	Irrigate wound.
16.13	Apply cervical collar.
16.14	Apply orthopedic devices including binders, braces and splints.
16.15	Apply anti-embolic hose and sequential compression devices.



16.16	Care for patient in skin, skeletal traction and external fixators.
16.17	Clean tong/pin site.
16.18	Describe and demonstrate how to monitor chest drainage system.
16.19	Perform naso-oral suction.
16.20	Perform tracheostomy care.
16.21	Demonstrate how to instruct patient in breathing exercises.
16.22	Set up vaporizer/humidifier.
16.23	Administer and maintain oxygen.
16.24	Collect timed urine specimen.
16.25	Collect clean-catch (midstream-voided) urine specimen.
16.26	Test urine using point of care testing procedures.
16.27	Irrigate urinary catheter.
16.28	Demonstrate how to maintain continuous urinary bladder irrigation.
16.29	Change ostomy appliance.
16.30	Connect nasogastric tube to suction machine.
16.31	Remove nasogastric tube.
16.32	Administer enteral feeding.
16.33	Administer enema.
16.34	Test stool for occult blood.
16.35	Irrigate nasogastric tube.
16.36	Irrigate oral cavity.
16.37	Irrigate colostomy.
16.38	Demonstrate how to maintain enteral feeding tubes.

16.39	Perform neurological checks.
16.40	Logroll patient.
16.41	Irrigate ear.
16.42	Irrigate eye.
16.43	Obtain and test a drop of blood for glucose monitoring.
16.44	Perform IV calculations.
16.45	Observe intravenous infusion and report signs of adverse reactions.
16.46	Inspect insertion site and remove IV needle or catheter from peripheral veins.
16.47	Hang bags or bottles of hydrating fluid.
17.0	Demonstrate how to administer medication (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
17.01	Identify controlled substances and associated legal and safety issues.
17.02	Demonstrate accurate dosage calculation.
17.03	Demonstrate the six rights of administering medication.
17.04	Demonstrate how to observe and respond to patient's need for medication.
17.05	Demonstrate how to administer topical medication.
17.06	Administer inhalants.
17.07	Administer oral medication.
17.08	Administer sublingual medication.
17.09	Administer rectal medication.
17.10	Administer vaginal medication.
17.11	Administer eye medications.
17.12	Administer eardrops.
17.13	Administer nose drops.

17.14	Administer intramuscular injection (including Z-tract).
17.15	Administer intradermal injection.
17.16	Administer subcutaneous injection.
17.17	Properly obtain, monitor and document use of controlled substances.
17.18	Instill bladder medication.
17.19	Care for equipment and supplies used to administer medications.
17.20	Assist the patient with safe self-administration of medications; reinforce teaching by the nurse on the patient's medication, their expected effects and potential side effects.
17.21	Observe and communicate effects of medications to the patient's assigned nurse.
17.22	Document administration of medication and patient's response on medical record.
17.23	Store medications properly according to facility policy and procedures.
17.24	Demonstrate use of medication resources.
18.0	Demonstrate how to provide bio-psycho-social support (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). -- The student will be able to:
18.01	Discuss family roles and their significance to health.
18.02	Respond to emotional needs of patient and family.
18.03	Demonstrate therapeutic communication.
18.04	Discuss coping mechanisms as seen in the performance of healthcare.
18.05	Differentiate between mental health and mental illness.
18.06	Recognize signs and symptoms of the various mental health disorders.
18.07	Discuss treatment modalities for the various mental health disorders.
18.08	Recognize the signs and symptoms for potential suicide and homicidal ideations in the patient and initiate appropriate interventions.
18.09	Describe treatments and resources for the addicted client.
18.10	Describe drug seeking behaviors and resources for potential risk of addiction.
18.11	Identify an individual in crisis and describe appropriate interventions.

18.12	Describe the common personality traits in mental health disorders including addictive behaviors.
18.13	Correlate common psychological and developmental theories with both bio- and psychosocial components of health.
18.14	Utilize verbal de-escalation techniques for agitated patients.
19.0	Demonstrate healthy lifestyle responsibility specific to personal health maintenance. – The student will be able to:
19.01	Identify psychological reactions to illness including defense mechanisms.
19.02	Identify complementary and alternative health practices.
19.03	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
19.04	Explain the basic concepts of positive self-image, wellness, and stress.
19.05	Develop a wellness and stress control plan that can be used in personal and professional life.
19.06	Discuss annual medical screenings.
19.07	Define dental health and self-care practices.
19.08	Provide education in warning signs and risk factors for mental health issues.
19.09	Acknowledge cultural diversity and/or spirituality when providing patient care.
19.10	Identify education level.
20.0	Implement education and resources for family wellness. – The student will be able to:
20.01	Discuss risk factors in communicable diseases.
20.02	Provide information on community resources for prenatal care.
20.03	Provide current immunization practices.
20.04	Discuss healthy nutrition options and resources.
20.05	Provide information on abuse and neglect in relationships.
21.0	Participate in Community Health Awareness Forums. – The student will be able to:
21.01	Perform basic medical screenings such as vital signs, weight, glucose, cholesterol, and body mass index.
21.02	Discuss risk factors, screenings and resources for cancer.

21.03 Identify and provide resources for mental health conditions including suicide and substance abuse.

21.04 Discuss collaborative community strategies from healthcare providers, law enforcement agencies, religious affiliates, education systems, and legislative offices.

**Career Certificate Program Course Number: PRN0290**

**Occupational Completion Point: B**

**Medical/Surgical Nursing 1 – 300 Hours – SOC Code 29-2061**

22.0 Demonstrate how to care for the surgical patient with a cardiovascular, respiratory, lymphatic, musculoskeletal, endocrine, or integumentary disease/disorder (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:

22.01 Identify signs and symptoms of disease/disorders of the body systems.

22.02 Identify diagnostic tests used to determine diseases/disorders of the body systems.

22.03 Identify medications used in the treatment of diseases/disorders of the body systems.

22.04 Identify nutritional needs of patients with diseases/disorders of the body systems.

22.05 Identify the symptoms of acute/chronic psychological distress.

22.06 Care for the patient with a:

22.06.01 cardiovascular/circulatory disease/disorder

22.06.02 respiratory disease/disorder

22.06.03 lymphatic/Immune disease/disorder

22.06.04 musculoskeletal disease/disorder

22.06.05 endocrine disease/disorder

22.06.06 integumentary/sensory disease/disorder

23.0 Demonstrate how to care for pre-operative and post-operative patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:

23.01 Assist the RN with pre-operative and post-operative teaching.

23.02 Perform a surgical prep.

23.03 Prepare patient for operating room.

23.04 Provide post-operative care.

23.05 Reinforce post-operative discharge teaching provided by the nurse.

**Career Certificate Program Course Number: PRN0291**  
**Occupational Completion Point: B**  
**Medical/Surgical Nursing 2 – 300 Hours – SOC Code 29-2061**

24.0	Demonstrate how to care for the surgical patient with a gastrointestinal, neurological, urinary, reproductive, or oncologic disease/disorder. (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
24.01	Identify signs and symptoms of disease/disorders of the body systems.
24.02	Identify diagnostic tests used to determine diseases/disorders of the body systems.
24.03	Identify medications used in the treatment of diseases/disorders of the body systems.
24.04	Identify nutritional needs of patients with diseases/disorders of the body systems.
24.05	Identify the symptoms of acute/chronic psychological distress.
24.06	Care for the patient with a:
24.06.01	gastrointestinal disease/disorder
24.06.02	neurological disease/disorder
24.06.03	urinary disease/disorder
24.06.04	reproductive disease/disorder
24.06.05	oncologic disease/disorder

**Career Certificate Program Course Number: PRN0690**  
**Occupational Completion Point: B**  
**Comprehensive Nursing – 150 Hours – SOC Code 29-2061**

25.0	Demonstrate how to care for maternal/newborn patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:
25.01	Describe prenatal care and normal development of the fetus.
25.02	Identify complications and interventions during pregnancy.
25.03	Describe how to assist the RN with admitting the patient to labor and delivery.
25.04	Describe the stages of the labor process and nursing responsibilities.
25.05	Describe the importance of monitoring contractions.
25.06	Recognize the importance of monitoring fetal heart rate.
25.07	Recognize signs/symptoms of fetal distress.
25.08	Describe signs of complications during labor and delivery and nursing interventions.

25.09	Demonstrate how to assist the RN with preparing the patient for caesarean.
25.10	Describe and demonstrate care during delivery process.
25.11	Describe Apgar score.
25.12	Demonstrate how to suction infant's respiratory passage with bulb syringe.
25.13	Demonstrate how to identify infant using mother's bracelet.
25.14	Demonstrate how to weigh and measure infant.
25.15	Demonstrate how to bathe infant.
25.16	Demonstrate how to carry infant.
25.17	Demonstrate how to feed infant.
25.18	Demonstrate how to collect urine specimen from infant.
25.19	Describe post- partum care.
25.20	Demonstrate perineal care.
25.21	Describe breast care for both breast feeding and bottle feeding mothers.
25.22	Assist mother with infant care.
25.23	Describe the care required for an infant with a circumcision.
25.24	Demonstrate perineal care and diapering technique.
25.25	Describe the discharge process of the postpartum and infant patient.
26.0	Demonstrate knowledge of SIDS/ SUIDS as it relates to the practical nursing role. – The student will be able to:
26.01	Define SIDS and Sudden Unexpected Infant Death (SUID).
26.02	Identify the critical SIDS/SUID risk-reduction methods for parents and caregivers.
26.03	Demonstrate an understanding of the benefits of back sleeping for newborns and infants.
26.04	Describe the LPN's key role as educators to parents and caregivers about SIDS/SUID.
27.0	Demonstrate how to care for pediatric patients, utilizing nursing principles (which can be accomplished through a combination of simulation, laboratory, and clinical settings in accordance with F.S.464.019). – The student will be able to:

27.01	Describe how to adapt nursing care for the pediatric patient.
27.02	Describe how to apply safety principles for the pediatric patient.
27.03	Describe general characteristics, particular needs, and problems of pediatric patients.
27.04	Demonstrate how to prepare patient and family for the hospital experience.
27.05	Identify signs and symptoms of common disorders/diseases.
27.06	Describe the nutritional dietary requirement of various prescribed diets.
27.07	Demonstrate how to provide diversion and recreational activities.
28.0	Develop transitional skills. -- The student will be able to:
28.01	Organize complex patient care assignments with multiple clients.
28.02	Discuss F.S. 464 and the corresponding Rules.
28.03	Discuss the scope of practice of a Licensed Practical Nurse in a leadership/supervisory role.
28.04	Describe the role of the LPN in delegation to unlicensed personnel.
28.05	Describe the Florida Board of Nursing requirements for licensure renewal including multi-state licensure.
28.06	Demonstrate an understanding of licensure by examination and by endorsement.
28.07	Complete application for licensure by examination.
28.08	Discuss current legislation pertinent to the Florida Board of Nursing and its effect on your nursing practice.
28.09	Determine how to apply for membership in a professional organization.
28.10	Discuss benefits and responsibilities of the LPN in membership in a professional organization.
29.0	Demonstrate employability skills specific to practical nursing. -- The student will be able to:
29.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
29.02	Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
29.03	Recognize the potential for stress in the practice of nursing and develop methods of managing stress.
29.04	Recognize the potential for violence in the workplace and describe methods of reducing that potential.



29.05	Identify employment opportunities for licensed practical nurses.
29.06	Participate in interview skill development activities.
29.07	Complete letters of job application and resignation.
29.08	Complete a professional portfolio, including a resume.

**IV Therapy: The following intended outcomes 01-12 can ONLY be taken by graduate Practical Nurses who have completed their practical nursing program.**

01.0	Explain the legal aspects of IV administration by practical nurses. – The student will be able to:
01.01	Explain the Nurse Practice Act and the Florida Administrative Code as it relates to IV therapy by LPNs.
01.02	Describe the policies and procedures of employing agencies as they relate to IV therapy by LPNs.
01.03	Chart IV therapy including all principles of charting necessary for legal documentation.
01.04	List the aspects of intravenous therapy that can only be given under the direct supervision of the registered professional nurse.
02.0	Demonstrate knowledge of the peripheral veins used for venipuncture. – The student will be able to:
02.01	Locate and identify the peripheral veins used for venipuncture.
02.02	List preference of peripheral vein location used for venipuncture.
03.0	Perform a venipuncture. – The student will be able to:
03.01	Prepare and support the patient psychologically.
03.02	Prepare and support the patient's family and/or visitors psychologically.
03.03	Prepare and support the patient physically.
03.04	Choose equipment appropriately.
03.05	Choose and properly prepare appropriate site(s).
03.06	Palpate the vein(s) adequately.
03.07	Insert equipment into the vein maintaining the safety of both the patient and the nurse.

04.0	Discuss the effect of IV therapy on the body. – The student will be able to:
04.01	Describe the relationship between intravenous therapy and the body's homeostatic and regulatory functions.
04.02	Discuss clinical manifestations of fluid and electrolyte imbalance.
05.0	Recognize and respond to adverse reactions to IV therapy. – The student will be able to:
05.01	Recognize the signs and symptoms of local complications to IV therapy.
05.02	Recognize the signs and symptoms of systemic complications to IV therapy.
05.03	Discuss preventive measures for both local and systemic complications.
05.04	Describe appropriate treatment measures for both local and systemic complications.
06.0	Recognize and use various types of IV equipment. – The student will be able to:
06.01	Identify various types of equipment used in administering IV therapy.
06.02	Discuss the criteria for the use of each type of equipment.
06.03	Describe how to troubleshoot for malfunction of various types of equipment.
07.0	Administer drugs intravenously. – The student will be able to:
07.01	List formulas, calculate fluid, and drug administration rate.
07.02	List methods of administering drugs intravenously, including the advantages and disadvantages of each.
07.03	Utilize the principles of compatibility and incompatibility of drugs and solutions in preparing for administration.
07.04	Administer IV drugs incorporating the "six rights" of medication administration.
08.0	Care for patients receiving IV drug therapy, blood and blood components, and/or parenteral nutrition. – The student will be able to:
08.01	Utilize the principles of chemotherapy, including protocols, actions, and side effects when caring for patients receiving drug therapy.
08.02	Manage the care of the patient receiving parenteral nutrition, including the principles of metabolism, potential complications, physical and psychological measures to ensure the desired therapeutic effect.
08.03	Manage the care of the patient receiving blood and blood components, following institutional protocols, including indications and contraindications for use and identification of adverse reactions.
09.0	Describe and utilize the principles of infection control in IV therapy. – The student will be able to:
09.01	Use aseptic technique as related to IV therapy.

09.02	Describe ways to prevent iatrogenic infection.
09.03	Describe treatment for iatrogenic infections.
10.0	Care for the patient receiving special IV therapy procedures. – The student will be able to:
10.01	Describe and utilize the nursing management necessary for saline locks.
10.02	Describe and utilize the nursing management necessary for central lines.
11.0	Recognize terminology pertinent to IV therapy. – The student will be able to:
11.01	Define terms common to IV therapy.
11.02	Interpret written IV terms correctly.
11.03	Use correct IV terminology in all written and oral communications.
12.0	Care for the patient receiving IV therapy via central lines. – The student will be able to:
12.01	Describe the location of central lines and the purpose of this IV therapy.
12.02	Administer fluids and medications via central lines.
12.03	List central line complications and interventions appropriate to correct them.
12.04	Describe and perform central line dressings, cap changes, and flushing, noting the adverse effects and remediation.
12.05	Recognize signs and symptoms of sepsis.
12.06	Identify Central Line Associated Blood Stream Infection (CLABSI) protocol.

## Additional Information

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal; therefore, the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program H170607 has a statewide articulation agreement approved by the Florida State Board of Education:

Nursing R.N. AS (1351380100) – 10 credit hours

The following industry certifications have been approved by the Florida State Board of Education for statewide articulation credit into the Nursing R.N. (1351380100) AS degree.

Licensed Practical Nurse (FDMQA017) – 10 credits

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 11, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:**       Nursing Assistant (Articulated)  
**Program Type:**       Career Preparatory  
**Career Cluster:**       Health Science

**Career Certificate Program**

Program Number	H170690
CIP Number	0351390203
Grade Level	30, 31
Standard Length	165 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1014 Nursing Assistants 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as nursing assistants (SOC 31-1014 Nursing Assistants).

The content includes but is not limited to interpersonal skills, medical terminology, legal and ethical responsibilities, safe and efficient work, gerontology, nutrition, pet-facilitated therapy, health and safety including Cardio-pulmonary Resuscitation (CPR) – heart saver level, and employability skills.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G LPN 7 G*	90 hours	31-9099
B	HCP0121	Nurse Aide and Orderly (Articulated)	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-1014

**\* The LPN 7 G district issued certification is a practical nurse. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator which must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.**

## Regulated Programs

Successful completion of this program from an approved school prepares the student for certification for employment as a Nursing Assistant, in accordance with Chapter 464.203, Florida Statutes. To be approved, this program must be supervised by a registered nurse and follow the faculty qualifications set forth in 64B9-15.005 (3) (a) F.A.C.

New programs must be approved by the Board of Nursing, Department of Health prior to enrolling students.

Those students who satisfactorily complete an approved course are eligible to apply to take the national nursing assistant examination being utilized in Florida, in accordance with Chapter 464.203, F.S. This program includes both Acute and Long Term Care.

In accordance with 64B9-15.005 F.A.C., students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15.

In accordance with 64B9-15.006 F.A.C., Clinical and simulated laboratory learning experiences must correlate with 80 hours of didactic instruction. In addition, a minimum of 40 hours clinical experiences must be obtained. Simulated labs are not a substitute for all clinical experience. The clinical instruction shall include at least 20 hours of long term care clinical instruction in a licensed nursing home or licensed long term care facility. Simulated labs are allowed to be used for no more than 20 hours of clinical instruction.

In addition, Students must have a minimum of 16 hours of training in communication and interpersonal skills, infection control, safety/emergency procedures, promoting residents' independence, and respecting residents' rights prior to any direct contact with a resident.

According to Section 400.211, F.S., persons who are enrolled in, or have completed, a state approved nursing assistant training program may be employed by a licensed nursing facility for a period of four months. However, the certification requirements must be met within four months of such initial employment.



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use verbal and written communications specific to nurse assisting.
- 13.0 Demonstrate legal and ethical responsibilities specific to nurse assisting.
- 14.0 Perform physical comfort and safety functions specific to nurse assisting.
- 15.0 Provide personal patient care.
- 16.0 Perform patient care procedures.
- 17.0 Apply principles of nutrition.
- 18.0 Provide care for geriatric patients.
- 19.0 Apply the principles of infection control specific to nursing assisting.
- 20.0 Provide biological, psychological, and social support.
- 21.0 Perform supervised organizational functions, following the patient care plan.
- 22.0 Assist with restorative (rehabilitative) activities.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Nursing Assistant (Articulated)  
Career Certificate Program Number: H170690**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HCP0121  
Occupational Completion Point: B  
Nurse Aide and Orderly (Articulated) – SOC Code 31-1014**

12.0	Use verbal and written communications specific to nurse assisting. – The student will be able to:
12.01	Obtain specified data from patient and family.
12.02	Utilize verbal and written information to assist with the patient's plan of care.
12.03	Demonstrate use of the communication system.
13.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. – The student will be able to:
13.01	Discuss and demonstrate legal and ethical behavior within the nursing assistant scope of practice including role limitations in Florida.
13.02	Describe the purpose of the chain of communication to resolve conflict.
13.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.04	Demonstrate safe standards of patient care including prevention and quality of care
13.05	Exhibit behavior supporting and promoting patients' and/or residents' rights.
13.06	Recognize potential for and prevention of medical errors.

13.07	Practice the proper procedures to follow regarding medical errors.
13.08	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.09	Recognize and report signs of substance abuse.
13.10	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
13.11	Define Omnibus Budget Reconciliation Act (OBRA).
13.12	Define Minimum Data Set (MDS).
14.0	Perform physical comfort and safety functions specific to nurse assisting. – The student will be able to:
14.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
14.02	Maintain safe patient units, equipment, and a comfortable environment.
14.03	Maintain service areas on the units including supplies and equipment.
14.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
14.05	Demonstrate adjustment of bed and side-rails according to facility policy.
14.06	Demonstrate and assist patient to dangle.
14.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
14.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
14.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
14.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
14.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
14.12	Assist patient with care and use of prosthetic/orthotic devices.
14.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
15.0	Provide personal patient care. -- The student will be able to:
15.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.
15.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.

15.03	Administer back rub with bath and as needed.
15.04	Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.
15.05	Demonstrate the use of a safety and/or electric razor to shave the patient.
15.06	Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.
15.07	Assist with and/or administer oral hygiene including denture care.
15.08	Assist patient to dress.
15.09	Assist patient with toileting using various types of restorative and rehabilitative equipment.
15.10	Assist patient with use of bedpan (standard and fracture)
15.11	Assist with bowel and bladder training.
15.12	Assist and/ or provide perineal care.
15.13	Empty, measure and record urinary output and/or drainage.
15.14	Demonstrate application and use of a leg bag, leg strap and dignity bag.
15.15	Monitor and assist with the drainage of urostomy bags and colostomy bags.
15.16	Assist patient with both donning and doffing prosthesis and brace.
15.17	Assist patient with meals.
15.18	Describe the relationships of body systems when providing patient care.
15.19	Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.
16.0	Perform patient care procedures. – The student will be able to:
16.01	Demonstrate ability to accurately measure, record and report vital signs.
16.02	Assist with the admission of a patient and/or resident.
16.03	Assist with the admission, transfer, and discharge of a patient and/or resident.
16.04	Maintain patient-belongings list.
16.05	Make unoccupied/occupied bed.

16.06	Provide passive range-of-motion exercises.
16.07	Apply anti-embolic hose and sequential compression devices.
16.08	Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.
16.09	Record fluid intake and output (I&O).
16.10	Observe, record, and report patient's emesis.
16.11	Monitor and provide urinary catheter care and drainage systems.
16.12	Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.
16.13	Collect stool specimen.
16.14	Assist with the collection of a sputum specimen.
16.15	Assist the nurse with care of the patient with complex medical needs.
16.16	Assist patient to apply binders.
16.17	Care for patient in skin and skeletal traction.
16.18	Assist with pre-operative and post-operative patient care.
16.19	Reinforce dressings under the supervision of the RN/LPN.
16.20	Obtain and record an apical pulse.
16.21	Provide cast care and/or pin care.
16.22	Provide care for eyeglasses, artificial eyes, and contact lens.
17.0	Apply principles of nutrition. – The student will be able to:
17.01	Identify nutrients and food groups.
17.02	Develop a basic food plan.
17.03	Describe special diets.
17.04	Check patient's diet tray for accuracy.
17.05	Monitor and document Nutritional Intake.

17.06	Identify and implement regional, cultural and religious food guidelines/preferences.
17.07	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
17.08	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
18.0	Provide care for geriatric patients. – The student will be able to:
18.01	Identify and assist with methods and procedures to prevent pressure ulcers.
18.02	Identify and assist with methods to prevent falls in the elderly.
18.03	Identify and assist with safety principles as related to the elderly.
18.04	Describe general characteristics, particular needs, and age related changes of the elderly.
18.05	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
18.06	Distinguish between fact and fallacy about the aging process.
18.07	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.
18.08	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.
18.09	Provide and involve patients in diversional activities.
18.10	Identify common alterations in elderly patient behavior.
18.11	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
18.12	Demonstrate awareness of common behaviors in drug use and abuse in the elderly.
18.13	Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.
18.14	Identify the need for community resources and services available to the elderly and their caregiver.
18.15	Identify components of the grief process.
18.16	Demonstrate an understanding of end of life care, hospice and palliative care.
19.0	Apply the principles of infection control specific to nursing assisting. – The student will be able to:
19.01	Discuss transmission-based precautions.
19.02	Identify the chain of infection.

19.03	Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.
19.04	Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
19.05	Follow isolation procedure with food tray, PPE, and other supplies/equipment.
19.06	Collect specimen from patient in isolation.
20.0	Provide biological, psychological, and social support. – The student will be able to:
20.01	Discuss family roles and their significance to health.
20.02	Respond to patient and family emotional needs.
21.0	Perform supervised organizational functions, following the patient care plan. – The student will be able to:
21.01	Organize and prioritize patient-care assignments.
21.02	Complete assignments accurately and in a timely manner.
22.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
22.01	List the purposes of restorative (rehabilitation) program.
22.02	Assist patient with specified restorative (rehabilitation) needs.
22.03	Assist patients/residents to reach the optimum level of independence.



## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The length of this program is 165 hours. Completion of this program should enable the postsecondary student to be given advanced standing in the Patient Care Technician and Patient Care Assistant programs.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Patient Care Assistant  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170692
CIP Number	0351390202
Grade Level	30, 31
Standard Length	290 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1014 Nursing Assistants 31-1011 Home Health Aides 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as cross trained nursing assistants (SOC 31-1014 Nursing Assistants). All others, Patient Care Assistants, Nursing Aides and Orderlies, or Home Health Aides. This program offers a broad foundation of knowledge and skills, expanding the traditional role of the nursing assistant, for both acute and long term care settings.

The program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 4 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G LPN 7 G*	90 hours	31-9099
B	HCP0121	Nurse Aide and Orderly (Articulated)	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-1014
C	HCP0332	Advanced Home Health Aide	REG NURSE 7 G LPN 7 G	50 hours	31-1011
D	HCP0020	Patient Care Assistant	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-9099

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use verbal and written communications specific to the nursing assistant.
- 13.0 Demonstrate legal and ethical responsibilities specific to the nursing assistant.
- 14.0 Perform physical comfort and safety functions specific to the nursing assistant.
- 15.0 Provide personal patient care.
- 16.0 Perform patient care procedures.
- 17.0 Apply principles of nutrition.
- 18.0 Provide care for geriatric patients.
- 19.0 Apply the principles of infection control specific to the nursing assistant.
- 20.0 Provide biological, psychological, and social support.
- 21.0 Perform supervised organizational functions, following the patient care plan.
- 22.0 Assist with restorative (rehabilitative) activities.
- 23.0 Use verbal and written communications specific to home health aide.
- 24.0 Demonstrate legal and ethical responsibilities specific to home health aide.
- 25.0 Perform physical comfort and safety functions specific to home health aide.
- 26.0 Apply principles of nutrition specific to home health aide.
- 27.0 Apply the principles of infection control specific to home health aide.
- 28.0 Perform home health-care services.
- 29.0 Perform nursing assistant skills related to the hospital setting.
- 30.0 Provide nursing assistant care for the adult patient.

Florida Department of Education  
Student Performance Standards

**Program Title: Patient Care Assistant**  
**Career Certificate Program Number: H170692**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003**  
**Occupational Completion Point: A**  
**Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HCP0121**  
**Occupational Completion Point: B**  
**Nurse Aide and Orderly (Articulated) – SOC Code 31-1014**

The following intended outcomes 12-23 should be taught together as a module to achieve the occupational completion point of Articulated Nursing Assistant. The average achieving student should be able to complete the module in 75 clock hours. The standard length for the Nursing Assistant (Articulated) program including the core is 165 hours but cannot be less than 120 hours.

12.0	Use verbal and written communications specific to nurse assisting. – The student will be able to:
12.01	Obtain specified data from patient and family.
12.02	Utilize verbal and written information to assist with the patient's plan of care.
12.03	Demonstrate use of the communication system.
13.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. – The student will be able to:
13.01	Discuss and demonstrate legal and ethical behavior within the nursing assistant scope of practice including role limitations in Florida.
13.02	Describe the purpose of the chain of communication to resolve conflict.
13.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.04	Demonstrate safe standards of patient care including prevention and quality of care

13.05	Exhibit behavior supporting and promoting patients' and/or residents' rights.
13.06	Recognize potential for and prevention of medical errors.
13.07	Practice the proper procedures to follow regarding medical errors.
13.08	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.09	Recognize and report signs of substance abuse.
13.10	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
13.11	Define Omnibus Budget Reconciliation Act (OBRA).
13.12	Define Minimum Data Set (MDS).
14.0	Perform physical comfort and safety functions specific to nurse assisting. – The student will be able to:
14.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
14.02	Maintain safe patient units, equipment, and a comfortable environment.
14.03	Maintain service areas on the units including supplies and equipment.
14.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
14.05	Demonstrate adjustment of bed and side-rails according to facility policy.
14.06	Demonstrate and assist patient to dangle.
14.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
14.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
14.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
14.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
14.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
14.12	Assist patient with care and use of prosthetic/orthotic devices.
14.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
15.0	Provide personal patient care. -- The student will be able to:



15.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.
15.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.
15.03	Administer back rub with bath and as needed.
15.04	Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.
15.05	Demonstrate the use of a safety and/or electric razor to shave the patient.
15.06	Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.
15.07	Assist with and/or administer oral hygiene including denture care.
15.08	Assist patient to dress.
15.09	Assist patient with toileting using various types of restorative and rehabilitative equipment.
15.10	Assist patient with use of bedpan (standard and fracture)
15.11	Assist with bowel and bladder training.
15.12	Assist and/ or provide perineal care.
15.13	Empty, measure and record urinary output and/or drainage.
15.14	Demonstrate application and use of a leg bag, leg strap and dignity bag.
15.15	Monitor and assist with the drainage of urostomy bags and colostomy bags.
15.16	Assist patient with both donning and doffing prosthesis and brace.
15.17	Assist patient with meals.
15.18	Describe the relationships of body systems when providing patient care.
15.19	Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.
16.0	Perform patient care procedures. – The student will be able to:
16.01	Demonstrate ability to accurately measure, record and report vital signs.
16.02	Assist with the admission of a patient and/or resident.
16.03	Assist with the admission, transfer, and discharge of a patient and/or resident.

16.04	Maintain patient-belongings list.
16.05	Make unoccupied/occupied bed.
16.06	Provide passive range-of-motion exercises.
16.07	Apply anti-embolic hose and sequential compression devices.
16.08	Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.
16.09	Record fluid intake and output (I&O).
16.10	Observe, record, and report patient's emesis.
16.11	Monitor and provide urinary catheter care and drainage systems.
16.12	Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.
16.13	Collect stool specimen.
16.14	Assist with the collection of a sputum specimen.
16.15	Assist the nurse with care of the patient with complex medical needs.
16.16	Assist patient to apply binders.
16.17	Care for patient in skin and skeletal traction.
16.18	Assist with pre-operative and post-operative patient care.
16.19	Reinforce dressings under the supervision of the RN/LPN.
16.20	Obtain and record an apical pulse.
16.21	Provide cast care and/or pin care.
16.22	Provide care for eyeglasses, artificial eyes, and contact lens.
17.0	Apply principles of nutrition. – The student will be able to:
17.01	Identify nutrients and food groups.
17.02	Develop a basic food plan.
17.03	Describe special diets.

17.04	Check patient's diet tray for accuracy.
17.05	Monitor and document Nutritional Intake.
17.06	Identify and implement regional, cultural and religious food guidelines/preferences.
17.07	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
17.08	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
18.0	Provide care for geriatric patients. – The student will be able to:
18.01	Identify and assist with methods and procedures to prevent pressure ulcers.
18.02	Identify and assist with methods to prevent falls in the elderly.
18.03	Identify and assist with safety principles as related to the elderly.
18.04	Describe general characteristics, particular needs, and age related changes of the elderly.
18.05	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
18.06	Distinguish between fact and fallacy about the aging process.
18.07	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.
18.08	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.
18.09	Provide and involve patients in diversional activities.
18.10	Identify common alterations in elderly patient behavior.
18.11	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
18.12	Demonstrate awareness of common behaviors in drug use and abuse in the elderly.
18.13	Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.
18.14	Identify the need for community resources and services available to the elderly and their caregiver.
18.15	Identify components of the grief process.
18.16	Demonstrate an understanding of end of life care, hospice and palliative care.
19.0	Apply the principles of infection control specific to nursing assisting. – The student will be able to:

19.01	Discuss transmission-based precautions.
19.02	Identify the chain of infection.
19.03	Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.
19.04	Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
19.05	Follow isolation procedure with food tray, PPE, and other supplies/equipment.
19.06	Collect specimen from patient in isolation.
20.0	Provide biological, psychological, and social support. – The student will be able to:
20.01	Discuss family roles and their significance to health.
20.02	Respond to patient and family emotional needs.
21.0	Perform supervised organizational functions, following the patient care plan. – The student will be able to:
21.01	Organize and prioritize patient-care assignments.
21.02	Complete assignments accurately and in a timely manner.
22.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
22.01	List the purposes of restorative (rehabilitation) program.
22.02	Assist patient with specified restorative (rehabilitation) needs.
22.03	Assist patients/residents to reach the optimum level of independence.

**Course number: HCP0332**

**Occupational completion point: C**

**Advanced Home Health Aide – 50 hours – SOC Code 31-1011**

Students in this module have already completed a Nursing Assistant program. After completing this module, the student will have achieved the occupational completion point of Advanced Home Health Aide (a home health aide who is also a nursing assistant). This program also meets the requirements of Home Health Aide as stated in Rules of the Department of Health and Rehabilitative services, Division of Health, Chapter 10D-68 -

Minimum Standards for Home Health Agencies.

**Please refer to 42CFR§484.36 for the clinical and faculty requirements for the Home Health Aide course.**

The recommended length of instruction for this module is 50 clock hours but no less than 20. Beginning 1995-96, secondary students who have completed the course 8417210 Nursing Assistant should take this module to become a home health aide.

23.0 Use verbal and written communications specific to home health aide. -- The student will be able to:

23.01 Obtain data from patient and family/significant others.

23.02 Utilize verbal and written information to contribute to the patient's plan of care.

23.03 Recognizes cultural differences in family.

24.0 Demonstrate legal and ethical responsibilities specific to home health aide. -- The student will be able to:

24.01 Demonstrate legal and ethical behavior within the role and scope of home health aide responsibilities.

24.02 Follow policies and procedures affecting the health, safety, and well-being of patients in the home setting.

25.0 Perform physical comfort and safety functions specific to home health aide. -- The student will be able to:

25.01 Maintain a clean and safe home environment for the patient.

25.02 Identify emergency evacuation procedures with adaptations to the home setting.

26.0 Apply principles of nutrition specific to home health aide. -- The student will be able to:

26.01 List factors that must be considered when purchasing food.

26.02 List factors that must be considered when storing food.

26.03 Discuss preparation and serving of trays in the home.

27.0 Apply the principles of infection control specific to home health aide. -- The student will be able to:

27.01 Provide care for patients with infectious diseases in the home.

27.02 Follow isolation procedures with food tray, garments, and other materials in the home.

27.03 Utilize standard and blood borne precautions in all home care.

28.0 Perform home health-care services. -- The student will be able to:

28.01 Follow an established work plan with the patient and family.

28.02	Perform patient-related cleaning tasks and laundry.
28.03	Identify methods for medication storage.
28.04	Assist patient with taking self-administered prescribed medication in the home and identify possible side effects and emergency procedures for adverse reactions in accordance with F.A.C. 59A-8.0095.
28.05	Demonstrate how to utilize specified equipment and supplies in the home.

**Course Number: HCP0020**  
**Occupational Completion Point: D**  
**Patient Care Assistant – 75 Hours – SOC Code 31-9099**

Students enrolled in this module have previously completed a Nursing Assistant and Home Health Aide program and are adding these skills to work in a health care facility other than a nursing home. The average achieving student should complete this module in 75 clock hours. The occupational completion point Patient Care Assistant can only be achieved when this module is completed plus the modules/or credentials for Home Health Aide and Nursing Assistant are satisfied.

29.0	Perform nursing assistant skills related to the hospital setting. -- The student will be able to:
29.01	Care for hospital equipment and supplies.
29.02	Transfer patient to stretcher and wheelchair.
29.03	Prepare hot and cold applications for nurse to apply them.
29.04	Assist patient to apply binders.
29.05	Care for patient in skin and skeletal traction.
29.06	Assist with pre-operative and post-operative patient care.
29.07	Reinforce dressings.
29.08	Practice nursing assistant skills in the hospital setting.
30.0	Provide nursing assistant care for the adult patient. -- The student will be able to:
30.01	Assist with physical examination.
30.02	Care for patients receiving oxygen therapy.
30.03	Change an unsterile dressing.
30.04	Take an apical pulse.
30.05	Take pedal pulse.

30.06 Demonstrate an understanding of artificial eye/contact lens care.

30.07 Demonstrate an understanding and knowledge of needs of patients with common health problems.

30.08 Measure pulse oximetry and report decreasing levels of O<sub>2</sub> saturation.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15.

### Special Notes

This program also meets the requirements of home health aide as stated in rules of the department of health and rehabilitative services, division of health, chapter 10d-68 - minimum standards for home health agencies.

**Please refer to 42CFR§484.36 for the clinical and faculty requirements for the Home Health Aide course.**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students who have completed the Health Science Core may articulate to this program. For teacher certification requirements for the remaining modules please check the certification diagram and/or the individual module.

Completion of this program should enable the postsecondary student to be given advanced standing in the Practical Nursing program H170607 as well as the ability to enter the Patient Care Technician program at OCP E.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.



### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Patient Care Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170694
CIP Number	0351390205
Grade Level	30, 31
Standard Length	600 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-1014 Nursing Assistants 31-1011 Home Health Aides 31-9099 Healthcare Support Workers, All Other 29-2099 Health Technologists and Technicians, All Other
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

This program is designed to prepare students for employment as advanced cross trained nursing assistants (patient care technicians), SOC Code 29-2099.00 (Health Technologists and Technicians), Health Care Technicians, Patient Care Assistants, Nursing Aides and Orderlies (66008439), Home Health Aides (66011456), or Allied Health Assistants. This program offers a broad foundation of knowledge and skills, expanding the traditional role of the nursing assistant, for both acute and long term care settings.

The program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 7 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G LPN 7 G* PRAC NURSE @7 %7%G (Must be a Registered Nurse)	90 hours	31-9099
B	HCP0121	Nurse Aide and Orderly (Articulated)		75 hours	31-1014
C	HCP0332	Advanced Home Health Aide	REG NURSE 7 G LPN 7 G PRAC NURSE @7 %7%G (Must be a Registered Nurse)	50 hours	31-1011
D	HCP0020	Patient Care Assistant		75 hours	31-9099
E	HSC0016	Allied Health Assistant		150 hours	31-9099
F	MEA0580	Advanced Allied Health Assistant		100 hours	31-9099
G	PRN0094	Patient Care Technician		60 hours	31-9099

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use verbal and written communications specific to the nursing assistant.
- 13.0 Demonstrate legal and ethical responsibilities specific to the nursing assistant.
- 14.0 Perform physical comfort and safety functions specific to the nursing assistant.
- 15.0 Provide personal patient care.
- 16.0 Perform patient care procedures.
- 17.0 Apply principles of nutrition.
- 18.0 Provide care for geriatric patients.
- 19.0 Apply the principles of infection control specific to the nursing assistant.
- 20.0 Provide biological, psychological, and social support.
- 21.0 Perform supervised organizational functions, following the patient care plan.
- 22.0 Assist with restorative (rehabilitative) activities.
- 23.0 Use verbal and written communications specific to home health aide.
- 24.0 Demonstrate legal and ethical responsibilities specific to home health aide.
- 25.0 Perform physical comfort and safety functions specific to home health aide.
- 26.0 Apply principles of nutrition specific to home health aide.
- 27.0 Apply the principles of infection control specific to home health aide.
- 28.0 Perform home health-care services.
- 29.0 Perform nursing assistant skills related to the hospital setting.
- 30.0 Provide nursing assistant care for the adult patient.
- 31.0 Perform skills representative of 1-3 major allied health areas as determined by local labor market demand.
- 32.0 Successfully complete a clinical rotation in the selected major allied health areas.
- 33.0 Perform additional skills from the previous module which are in the aide level and do not go beyond the scope of practice of unlicensed assistive personnel.
- 34.0 Successfully complete a clinical rotation in the selected major allied health areas.
- 35.0 Demonstrate knowledge of organizational and effective team member skills.
- 36.0 Practice organizational and effective team member skills in a clinical setting.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Patient Care Technician  
Career Certificate Program Number: H170694**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HCP0121  
Occupational Completion Point: B  
Nurse Aide and Orderly (Articulated) – 75 Hours - SOC Code 31-1014**

The following intended outcomes 12-23 should be taught together as a module to achieve the occupational completion point of Articulated Nursing Assistant.	
12.0	Use verbal and written communications specific to nurse assisting. – The student will be able to:
12.01	Obtain specified data from patient and family.
12.02	Utilize verbal and written information to assist with the patient's plan of care.
12.03	Demonstrate use of the communication system.
13.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. – The student will be able to:
13.01	Discuss and demonstrate legal and ethical behavior within the nursing assistant scope of practice including role limitations in Florida.
13.02	Describe the purpose of the chain of communication to resolve conflict.
13.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.04	Demonstrate safe standards of patient care including prevention and quality of care
13.05	Exhibit behavior supporting and promoting patients' and/or residents' rights.

13.06	Recognize potential for and prevention of medical errors.
13.07	Practice the proper procedures to follow regarding medical errors.
13.08	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.09	Recognize and report signs of substance abuse.
13.10	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
13.11	Define Omnibus Budget Reconciliation Act (OBRA).
13.12	Define Minimum Data Set (MDS).
14.0	Perform physical comfort and safety functions specific to nurse assisting. – The student will be able to:
14.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
14.02	Maintain safe patient units, equipment, and a comfortable environment.
14.03	Maintain service areas on the units including supplies and equipment.
14.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
14.05	Demonstrate adjustment of bed and side-rails according to facility policy.
14.06	Demonstrate and assist patient to dangle.
14.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
14.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
14.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
14.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
14.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
14.12	Assist patient with care and use of prosthetic/orthotic devices.
14.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
15.0	Provide personal patient care. -- The student will be able to:
15.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.

15.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.
15.03	Administer back rub with bath and as needed.
15.04	Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.
15.05	Demonstrate the use of a safety and/or electric razor to shave the patient.
15.06	Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.
15.07	Assist with and/or administer oral hygiene including denture care.
15.08	Assist patient to dress.
15.09	Assist patient with toileting using various types of restorative and rehabilitative equipment.
15.10	Assist patient with use of bedpan (standard and fracture)
15.11	Assist with bowel and bladder training.
15.12	Assist and/ or provide perineal care.
15.13	Empty, measure and record urinary output and/or drainage.
15.14	Demonstrate application and use of a leg bag, leg strap and dignity bag.
15.15	Monitor and assist with the drainage of urostomy bags and colostomy bags.
15.16	Assist patient with both donning and doffing prosthesis and brace.
15.17	Assist patient with meals.
15.18	Describe the relationships of body systems when providing patient care.
15.19	Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.
16.0	Perform patient care procedures. – The student will be able to:
16.01	Demonstrate ability to accurately measure, record and report vital signs.
16.02	Assist with the admission of a patient and/or resident.
16.03	Assist with the admission, transfer, and discharge of a patient and/or resident.
16.04	Maintain patient-belongings list.



16.05	Make unoccupied/occupied bed.
16.06	Provide passive range-of-motion exercises.
16.07	Apply anti-embolic hose and sequential compression devices.
16.08	Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.
16.09	Record fluid intake and output (I&O).
16.10	Observe, record, and report patient's emesis.
16.11	Monitor and provide urinary catheter care and drainage systems.
16.12	Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.
16.13	Collect stool specimen.
16.14	Assist with the collection of a sputum specimen.
16.15	Assist the nurse with care of the patient with complex medical needs.
16.16	Assist patient to apply binders.
16.17	Care for patient in skin and skeletal traction.
16.18	Assist with pre-operative and post-operative patient care.
16.19	Reinforce dressings under the supervision of the RN/LPN.
16.20	Obtain and record an apical pulse.
16.21	Provide cast care and/or pin care.
16.22	Provide care for eyeglasses, artificial eyes, and contact lens.
17.0	Apply principles of nutrition. – The student will be able to:
17.01	Identify nutrients and food groups.
17.02	Develop a basic food plan.
17.03	Describe special diets.
17.04	Check patient's diet tray for accuracy.

17.05	Monitor and document Nutritional Intake.
17.06	Identify and implement regional, cultural and religious food guidelines/preferences.
17.07	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
17.08	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
18.0	Provide care for geriatric patients. – The student will be able to:
18.01	Identify and assist with methods and procedures to prevent pressure ulcers.
18.02	Identify and assist with methods to prevent falls in the elderly.
18.03	Identify and assist with safety principles as related to the elderly.
18.04	Describe general characteristics, particular needs, and age related changes of the elderly.
18.05	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
18.06	Distinguish between fact and fallacy about the aging process.
18.07	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.
18.08	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.
18.09	Provide and involve patients in diversional activities.
18.10	Identify common alterations in elderly patient behavior.
18.11	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
18.12	Demonstrate awareness of common behaviors in drug use and abuse in the elderly.
18.13	Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.
18.14	Identify the need for community resources and services available to the elderly and their caregiver.
18.15	Identify components of the grief process.
18.16	Demonstrate an understanding of end of life care, hospice and palliative care.
19.0	Apply the principles of infection control specific to nursing assisting. – The student will be able to:
19.01	Discuss transmission-based precautions.

19.02	Identify the chain of infection.
19.03	Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.
19.04	Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
19.05	Follow isolation procedure with food tray, PPE, and other supplies/equipment.
19.06	Collect specimen from patient in isolation.
20.0	Provide biological, psychological, and social support. – The student will be able to:
20.01	Discuss family roles and their significance to health.
20.02	Respond to patient and family emotional needs.
21.0	Perform supervised organizational functions, following the patient care plan. – The student will be able to:
21.01	Organize and prioritize patient-care assignments.
21.02	Complete assignments accurately and in a timely manner.
22.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
22.01	List the purposes of restorative (rehabilitation) program.
22.02	Assist patient with specified restorative (rehabilitation) needs.
22.03	Assist patients/residents to reach the optimum level of independence.

**Course Number: HCP0332**

**Occupational Completion Point: C**

**Advanced Home Health Aide – 50 Hours – SOC Code 31-1011**

Students in this module have already completed a Nursing Assistant program. After completing this module, the student will have achieved the occupational completion point of Advanced Home Health Aide (a home health aide who is also a nursing assistant). This program also meets the requirements of Home Health Aide as stated in Rules of the Department of Health and Rehabilitative services, Division of Health, Chapter 10D-68 - Minimum Standards for Home Health Agencies.

**Please refer to 42CFR§484.36 for the clinical and faculty requirements for the Home Health Aide course.**

The recommended length of instruction for this module is 50 clock hours but no less than 20. Beginning 1995-96, secondary students who have completed the course 8417210 Nursing Assistant should take this module to become a home health aide.

23.0 Use verbal and written communications specific to home health aide. -- The student will be able to:

23.01 Obtain data from patient and family/significant others.

23.02 Utilize verbal and written information to contribute to the patient's plan of care.

23.03 Recognizes cultural differences in family.

24.0 Demonstrate legal and ethical responsibilities specific to home health aide. -- The student will be able to:

24.01 Demonstrate legal and ethical behavior within the role and scope of home health aide responsibilities.

24.02 Follow policies and procedures affecting the health, safety, and well-being of patients in the home setting.

25.0 Perform physical comfort and safety functions specific to home health aide. -- The student will be able to:

25.01 Maintain a clean and safe home environment for the patient.

25.02 Identify emergency evacuation procedures with adaptations to the home setting.

26.0 Apply principles of nutrition specific to home health aide. -- The student will be able to:

26.01 List factors that must be considered when purchasing food.

26.02 List factors that must be considered when storing food.

26.03 Discuss preparation and serving of trays in the home.

27.0 Apply the principles of infection control specific to home health aide. -- The student will be able to:

27.01 Provide care for patients with infectious diseases in the home.

27.02 Follow isolation procedures with food tray, garments, and other materials in the home.

27.03 Utilize standard and blood borne precautions in all home care.

28.0 Perform home health-care services. -- The student will be able to:

28.01 Follow an established work plan with the patient and family.

28.02 Perform patient-related cleaning tasks and laundry.

28.03	Identify methods for medication storage.
28.04	Assist patient with taking self-administered prescribed medication in the home and identify possible side effects and emergency procedures for adverse reactions in accordance with F.A.C. 59A-8.0095.
28.05	Demonstrate how to utilize specified equipment and supplies in the home.

**Course Number: HCP0020  
Occupational Completion Point: D  
Patient Care Assistant – 75 Hours – SOC Code 31-9099**

Students enrolled in this module have previously completed a Nursing Assistant and Home Health Aide program and are adding these skills to work in a health care facility other than a nursing home. The average achieving student should complete this module in 75 clock hours. The occupational completion point Patient Care Assistant can only be achieved when this module is completed plus the modules/or credentials for Home Health Aide and Nursing Assistant are satisfied.

29.0	Perform nursing assistant skills related to the hospital setting. -- The student will be able to:
29.01	Care for hospital equipment and supplies.
29.02	Transfer patient to stretcher and wheelchair.
29.03	Prepare hot and cold applications for nurse to apply them.
29.04	Assist patient to apply binders.
29.05	Care for patient in skin and skeletal traction.
29.06	Assist with pre-operative and post-operative patient care.
29.07	Reinforce dressings.
29.08	Practice nursing assistant skills in the hospital setting.
30.0	Provide nursing assistant care for the adult patient. -- The student will be able to:
30.01	Assist with physical examination.
30.02	Care for patients receiving oxygen therapy.
30.03	Change an unsterile dressing.
30.04	Take an apical pulse.
30.05	Take pedal pulse.
30.06	Demonstrate an understanding of artificial eye/contact lens care.

30.07 Demonstrate an understanding and knowledge of needs of patients with common health problems.

30.08 Measure pulse oximetry and report decreasing levels of O<sub>2</sub> saturation.

**Course Number: HSC0016**

**Occupational Completion Point: E**

**Allied Health Assistant – 150 Hours – SOC Code 31-9099**

Students enrolled in this module have completed the Patient Care Assistant competencies and/or are adding these skills to be a multi-skilled worker. Students will perform skills representative of one to three areas of allied health care in the laboratory and clinical settings. Major areas of allied health are defined as physical therapy, emergency, radiation, laboratory and respiratory medicine, and occupational therapy. Other areas of health, medicine, dentistry, or veterinary may be included with instructor provided competencies. **Such teacher made competencies must remain at the aide level and not go beyond the scope of practice of unlicensed assistive personnel. Invasive procedures that fall into the nursing scope of practice are not to be added.** Clinical experience is defined as activities performed in the clinical setting under the supervision of the appropriate health professional. School certificates for this module must be for “Allied Health Assistant”. Specific competencies should be listed on the back of the certificate.

31.0 Perform aide level skills representative of 1 to 3 major allied health areas in the school laboratory before beginning the clinical phase. --  
The student will be able to:

31.01 Perform skills related to the body systems.

31.02 If unlicensed physical restorative type skills are to be taught, students will be able to:

31.02.01.1 Describe the functions of bones and muscles as related to the practice of physical therapy.

31.02.01.2 Define disability and identify types of disabilities.

31.02.01.3 Describe equipment used in physical therapy.

31.02.01.4 Teach crutch and walker use and care.

31.02.01.5 Perform safe body mechanics and transfer techniques.

31.02.01.6 Demonstrate an understanding of the use of modalities and practice of physical therapy (i.e. Ultrasound, heat and cold therapeutic massage, E-STEM, wound care, elastic stockings).

31.02.01.7 Perform communication skills specifically related to physical therapy.

31.02.01.8 Assist clients to eat using prompting techniques in the use of adaptive feeding devices.

31.02.01.9 Identify augmented communication devices and describe the purpose of each.

31.02.01.10 Demonstrate techniques used in active and passive range of motion exercises.

31.02.01.11 Instruct patients in bed/wheelchair mobility activities.

31.02.01.12	Describe the relationship between long-term and short-term goals.
31.03	If unlicensed occupational restorative type skills are to be taught, students will be able to:
31.03.01.1	Describe, name, and discuss the avenues of occupational therapy practice and the equipment used.
31.03.01.2	Perform feeding and dressing skills using one hand and/or adaptive equipment.
31.03.01.3	Perform communication skills specifically related to occupational therapy.
31.03.01.4	Perform and instruct range of motion exercises.
31.03.01.5	Train the client in clothing care skills.
31.03.01.6	Train the client in food preparation skills.
31.03.01.7	Demonstrate an understanding of assisting the client in money management skills.
31.04	If unlicensed respiratory restorative type skills are to be taught, students will be able to:
31.04.01.1	Name and discuss the avenues of Respiratory Care Practice.
31.04.01.2	Describe common respiratory diseases (asthma, emphysema, chronic bronchitis, and atelectasis) and common medications used to treat respiratory diseases.
31.04.01.3	Assemble and practice using gas reducing and flow regulating equipment.
31.04.01.4	Demonstrate and discuss the use of incentive spirometers.
31.04.01.5	Differentiate between various oxygen-delivery devices (nasal cannulas, simple and rebreathing masks, oxyhoods, enclosures).
31.04.01.6	Stock shelves with, process, and perform preventative maintenance on respiratory care equipment.
31.04.01.7	Check emergency equipment assigned to respiratory care.
31.04.01.8	Demonstrate/discuss the use of postural drainage and percussion.
31.04.01.9	Discuss and practice the use of the pulse oximeter.
31.04.01.10	Describe the equipment and use of humidity/aerosol.
31.05	If medical administrative assisting type skills is one of the selected allied health areas to be taught, students will:
31.05.01.1	Demonstrate an understanding of basic medical terminology e.g. prefixes, suffixes, and root words related to major body systems.
31.05.01.2	Demonstrate an understanding of straight numerical, alphabetical and terminal digit filing.

31.05.01.3	Demonstrate computer literacy, keyboarding and retrieval skills.
31.05.01.4	List procedures for scheduling and referring patients, and handling walk-in emergency patients.
31.05.01.5	Understand what is required to create and submit a medical bill.
31.05.01.6	Define a Release of Medical Information, Explanation of Benefit, Assignment of Benefit and Electronic Remittance Advice
31.05.01.7	Develop and understanding of the term HMO and be able to interpret the information contained on the patient's insurance card.
31.05.01.8	Understand the financial terms and procedures involved in operating a medical office practice, including Income, Expense, Accounts Receivable, Accounts payable, Cash and Accrual Accounting, Write-off Adjustments.
31.06 If unlicensed radiologic type skills are to be taught, students will:	
31.06.01.1	Identify the function of a cassette, film, and screen.
31.06.01.2	Describe how radiation produces an image on film.
31.06.01.3	Identify the process by which x-ray film is developed.
31.06.01.4	Process a film through an automatic processor.
31.06.01.5	Identify anatomical position and terminology related to position (supine, prone, proximal, distal, medial, lateral, superior, inferior, anterior/ventral, oblique, and posterior/dorsal).
31.06.01.6	Identify patient properly (check identification band, etc.).
31.06.01.7	Explain appropriate exam(s) to the patient.
31.06.01.8	Perform safe body mechanics and transferring skills of patient onto x-ray table.
31.06.01.9	Position patient for exam(s) (chest, KUB, hand, and foot).
31.06.01.10	Position x-ray tube to simulate exposure for exam(s) (chest, KUB, hand, and foot).
31.06.01.11	Use an artificial arm to perform venipuncture.
31.07 If unlicensed electrocardiograph aide type skills are to be taught, students will:	
31.07.01.1	Describe the cardiovascular system.
31.07.01.2	Demonstrate knowledge of, apply and use medical instrumentation modalities.
31.07.01.3	Demonstrate knowledge of the use of electrocardiographic equipment on patients who have special needs and considerations.



31.07.01.4	Perform patient care techniques in the health care facility.
31.07.01.5	Demonstrate knowledge of telemetry application,
31.07.01.6	Assist with the patient care of patients undergoing ambulatory monitoring and stress testing.
31.07.01.7	Demonstrate knowledge of patient care of patients with pacemakers and implanted defibrillators.
31.07.01.8	Identify legal and ethical responsibilities of an EKG/ECG monitor technician.
31.07.01.9	Recognize normal and abnormal monitoring.
31.08 If unlicensed phlebotomy aide type skills are to be taught, students will:	
31.08.01.1	Demonstrate accepted professional communication and interpersonal skills of a phlebotomist.
31.08.01.2	Discuss phlebotomy in relation to the health care setting.
31.08.01.3	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
31.08.01.4	Recognize and identify collection reagents, supplies, equipment and interfering chemical substances.
31.08.01.5	Demonstrate skills and knowledge necessary to perform phlebotomy.
31.08.01.6	Practice accepted procedures of transporting, accessioning and processing specimens.
31.08.01.7	Practice quality assurance and safety.
31.09 If unlicensed geriatric type skills are to be taught, (for students completing nurse assisting only) students will:	
31.09.01.1	Recognize types of long term care facilities and levels of care.
31.09.01.2	Be familiar with legislation affecting long term care.
31.09.01.3	Discuss physical and emotional effects of aging and appropriate ways of dealing with them.
31.09.01.4	Recognize the stages of dementia and the care of residents in each stage.
31.09.01.5	Discuss reality orientation, reminiscing, and validation therapy.
31.09.01.6	Describe the effects of aging on nutritional needs.
31.09.01.7	Provide for the safety of the elderly and chronically ill patient, including prevention of falls, prevention of infections, provision of a safe environment and prompt attendance to patients' needs.
31.09.01.8	Check integrity of patient's skin condition and take appropriate actions when needed.

31.09.01.9	Recognize common chronic illnesses and the special care required.
31.09.01.10	Provide appropriate end of life care.
31.09.01.11	Have a knowledge of common medications taken by the elderly and chronically ill, their effects, and side effects.
32.0	Successfully complete a clinical rotation in 1-3 major allied health areas. -- The student will be able to:
32.01	Demonstrate skills in the clinical setting as outlined in 32.0.
32.02	Complete clinical rotations under the supervision of a duly licensed/certified allied health care or nursing professional.
32.03	Exhibit behavior consistent with the professional ethics required of each of the allied health areas being studied.

**Course Number: MEA0580**

**Occupational Completion Point: F**

**Advanced Allied Health Assistant – 100 Hours – SOC Code 31-9099**

Students enrolled in this module have completed the Patient Care Assistant and Allied Health Assistant competencies and/or are adding these skills to be a more multi-skilled worker. Students will perform skills representative of one to three areas of allied health care in the laboratory and clinical settings. Major areas of allied health are defined as physical therapy, emergency, radiation, laboratory and respiratory medicine, and occupational therapy. Other areas of health, medicine, dentistry, or veterinary may be included with instructor provided competencies. **Such teacher made competencies must remain at the aide level and not go beyond the scope of practice of unlicensed assistive personnel. Invasive procedures that fall into the nursing scope of practice are not to be added.** Clinical experience is defined as activities performed in the clinical setting under the supervision of the appropriate health professional. School certificates for this module must be for “Advanced Allied Health Assistant”. Specific competencies should be listed on the back of the certificate.

33.0	Perform additional skills from the previous module which are in the aide level and do not go beyond the scope of practice of unlicensed assistive personnel.
34.0	Successfully complete a clinical rotation in the selected major allied health area. -- The student will be able to:
34.01	Demonstrate skills in the clinical setting as outlined in 32.0.
34.02	Complete clinical rotations under the supervision of a duly licensed/certified allied health care or nursing professional.
34.03	Exhibit behavior consistent with the professional ethics required of each of the allied health areas being studied.

**Course Number: PRN0094**

**Occupational Completion Point: G**

**Patient Care Technician – 60 Hours – SOC 31-9099**

Students enrolled in this module MUST have completed ALL modules in this program. Upon completion they will be prepared as the cross trained unlicensed worker known as the Patient Care Technician (Industry Title).

35.0	Demonstrate knowledge of organizational and effective team member skills. -- The student will be able to:
35.01	Define terms associated with organizational and time management skills.
35.02	Discuss the role of unlicensed assistive personnel (UAP's) in relation to the terms in 36.01.
35.03	Discuss various situations when a Patient Care Technician would utilize organizational skills.
35.04	List the characteristics of an effective team member.
35.05	Discuss the chain of command and characteristics of team member relationships.
35.06	Perform a self-evaluation.
36.0	Practice organizational and effective team member skills in a clinical setting. -- The student will be able to:
36.01	Demonstrate ways to deal with conflict.
36.02	Demonstrate employability skills specific to patient care technician.
36.03	Demonstrate communication skills that are supportive of team members.
36.04	Demonstrate effective time management skills.
36.05	Give and receive end-of-shift reports to team members.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15.

### Special Notes

This program also meets the requirements of Home Health Aide as stated in Rules of the Department of Health and Rehabilitative services, Division of Health, Chapter 10D-68 - Minimum Standards for Home Health Agencies.

**Please refer to 42CFR§484.36 for the clinical and faculty requirements for the Home Health Aide course.**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students who have completed the Health Science Core may articulate to this program. For teacher certification requirements for the remaining modules please check the certification diagram and/or the individual module.

A voluntary Certified Patient Care Technician (CPCT) national Examination is available through the National Healthcare Association:

7500 West 160<sup>th</sup> Street  
Stilwell, Kansas 66085  
Phone: 973-605-1881  
Toll Free: (800) 499-9092  
FAX: (913) 661-6291

Completion of this program should enable the postsecondary student to be given advanced standing in the Practical Nursing program H170607.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the core in another program at any level. However, outcomes 01-11 must be completed before the additional modules in this program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Optometric Assisting  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170705
CIP Number	0351180203
Grade Level	30, 31
Standard Length	1080 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2081 Opticians, Dispensing 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as optometric assistants or SOC 29-2081 Opticians, Dispensing.

The content includes but is not limited to basic instruction in anatomy and physiology, CPR, Heartsaver, office practices and dispensing of visual devices. Because optometrists now deal with certain drugs, students need knowledge of diagnostic and therapeutic drugs under supervision.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## **Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the post-secondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	OPT0720	Foundations of Vision Care	TEC OPTICS 7G OPTOM ASST 7 G	102 hours	31-9099
B	OPT0721	Optometric Assistant 1		336 hours	29-2081
	OPT0722	Optometric Assistant 2		642 hours	



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system.
- 02.0 Demonstrate legal and ethical responsibilities.
- 03.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 04.0 Demonstrate an understanding of health and vision concepts.
- 05.0 Demonstrate understanding of a prescription.
- 06.0 Recognize and practice workplace safety and security procedures.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Recognize and respond to emergency situations.
- 09.0 Demonstrate an understanding of information technology applications in the vision care office.
- 10.0 Demonstrate employability skills.
- 11.0 Demonstrate knowledge of business management techniques.
- 12.0 Perform delivery of optical devices.
- 13.0 Demonstrate knowledge of basic ocular anatomy and physiology.
- 14.0 Report and record patient information.
- 15.0 Perform and assist in procedures used in visual testing.
- 16.0 Perform special procedures.
- 17.0 Demonstrate knowledge of contact lenses.

Florida Department of Education  
Student Performance Standards

Program Title: Optometric Assisting  
Career Certificate Program Number: H170705

<b>Course Number: OPT0720</b>	
<b>Occupational Completion Point: A</b>	
<b>Foundations of Vision Care – 102 Hours – SOC Code 31-9099</b>	
01.0	Demonstrate knowledge of the healthcare delivery system. – The student will be able to:
01.01	Describe how various social conditions that affect healthcare delivery.
01.02	Recognize victims of various types of abuse and neglect including domestic violence.
01.03	Identify resources to assist victims of abuse and neglect including domestic violence.
02.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
02.01	Differentiate between laws and a code of ethics.
02.02	Describe the composition and scope of practice of the vision care team including OD, MD, COA, LDO, and scribe.
02.03	Discuss the American Optometric Association (AOA) Paraoptometric Code of Ethics.
02.04	Demonstrate knowledge of both doctors' and patients' rights and responsibilities.
02.05	Identify qualities and procedures for accurate and legal documentation and record keeping.
02.06	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
02.07	Describe the criteria and procedure for properly identifying patients.
02.08	Describe informed consent including implied, verbal, written and need for capacity.
02.09	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment, and fraud.
03.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
03.01	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
03.02	Demonstrate basic speaking, active listening skills, and non-verbal skills.

03.03	Compose written communication using correct spelling, grammar, and formatting.
03.04	Recognize the importance of courtesy and respect for patients and other healthcare workers including diverse age, cultural, economic, ethnic, and religious groups.
04.0	Demonstrate an understanding of health and vision concepts. – The student will be able to:
04.01	Identify the major body systems.
04.02	Identify the medical conditions that affect eye health.
04.03	Discuss the adverse effects of alcohol, tobacco, and drug use (legal and illegal) as related to eye health
04.04	Discuss the adverse effects of poor nutrition and diet as related to eye health.
04.05	Identify the difference between a vision screening and a comprehensive eye exam.
04.06	Describe the importance of a comprehensive eye exam.
04.07	Demonstrate introductory knowledge of the anatomy and physiology of the eye and the vision system.
04.08	Recognize the difference between a chief complaint and a HPI (History of Present Illness).
04.09	Identify signs and symptoms that may be sight-threatening to patients.
04.10	Identify psychological reactions to vision loss including defense mechanisms and grief.
04.11	Demonstrate knowledge of prefixes, suffixes, and root words in medical and vision terminology.
05.0	Demonstrate understanding of a prescription. - The student will be able to :
05.01	Demonstrate knowledge of introduction to refractive error.
05.02	Identify the reasons contact lenses and eyewear are prescribed and worn.
05.03	Identify legal requirements of a prescription.
06.0	Recognize and practice workplace safety and security procedures. – The student will be able to:
06.01	Utilize Occupational Safety and Health Administration (OSHA) safety procedures to identify safe and unsafe working conditions.
06.02	Describe the importance of securing medical supplies and using user manuals to properly operate equipment.
06.03	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
06.04	Demonstrate proper body mechanics to prevent personal injury.

06.05	Demonstrate fire, safety, disaster and evacuations procedures.
07.0	Recognize and practice infection control procedures. – The student will be able to:
07.01	Define principles of infection control including standard and transmission-based precautions.
07.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and using PPE to break the chain of infection.
07.03	Describe how to dispose correctly of biohazardous materials and sharps according to appropriate government guidelines such as OSHA.
07.04	Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
08.0	Recognize and respond to emergency situations. – The student will be able to:
08.01	Record vital signs.
08.02	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), and foreign body airway obstruction (FBAO).
09.0	Demonstrate an understanding of information technology applications in the vision care office. – The student will be able to:
09.01	Describe electronic medical technology applications in vision care and how it can be used in vision care.
09.02	Demonstrate basic computer skills.
09.03	Type 25 words per minute.
09.04	Describe office procedures for faxing and copying options.
10.0	Demonstrate employability skills. – The student will be able to:
10.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
10.02	Identify appropriate professional standards of healthcare workers.
10.03	Identify characteristics of effective teams and leaders
10.04	Recognize factors and situations that may lead to conflict, and methods for solutions
10.05	Discuss laws governing harassment, labor, and employment
10.06	Identify documents that may be required when applying for a job.
10.07	Write an appropriate resume and cover letter.
10.08	Conduct a job search.

10.09 Complete a job application form correctly.

10.10 Examine possible certifications or licensing in the vision career field for career advancement.

**Course Number: OPT0721**  
**Occupational Completion Point: B**  
**Optometric Assistant 1 –336 Hours – SOC Code 29-2081**

11.0 Demonstrate knowledge of business management techniques. -- The student will be able to:

11.01 Classify patients for scheduling urgency based on triage concepts.

11.02 Describe laws, regulations, and procedures for maintaining patient files.

11.03 Identify common methods of payment for vision and healthcare services.

11.04 Demonstrate knowledge of criteria and appropriate use of vision vs health insurance.

11.05 Demonstrate knowledge of common insurance terminology.

11.06 Describe the various methods of authorizing insurance.

11.07 . Describe the importance of making accurate and timely insurance claims.

11.08 Demonstrate the knowledge of how CPT, ICD, and HCPCS codes are utilized.

11.09 Demonstrate an understanding of billing and collection procedures for current and overdue accounts.

11.10 Practice office supply control.

12.0 Perform delivery of optical devices. -- The student will be able to:

12.01 Demonstrate knowledge of lens physics including:

- 12.01.1 Optical center
- 12.01.2 Refraction
- 12.01.3 Reflection
- 12.01.4 Dispersion
- 12.01.5 Index of refraction
- 12.01.6 Abbe value
- 12.01.7 Specific gravity
- 12.01.8 Prism

12.02 Describe characteristics of convex, concave, and toric lenses and use that knowledge to identify these lenses.

12.03	Describe various lens designs, materials, and options.
12.04	Demonstrate basic knowledge of how lenses are made.
12.05	Neutralize the different types of lenses.
12.06	Perform optical math to interpret prescriptions including:
12.06.1	Transposition
12.06.2	True reading power
12.06.3	Intermediate power
12.06.4	Spherical equivalent
12.06.5	Optical cross
12.06.6	Nominal lens formula
12.06.7	Focal length
12.06.8	Combining and splitting prism
12.07	Demonstrate knowledge of frame material and style selections.
12.08	Interpret frame markings and take manual frame measurements using boxing system.
12.09	Identify patient information needed to make needs-based frame and lens recommendations.
12.10	Assist patients with frame and lens selection.
12.11	Take patient pupillary distance and vertical measurements for appropriate lens designs.
12.12	Identify the information needed on order form for ordering spectacle lenses and frames.
12.13	Adjust and repair spectacles.
12.14	Verify lenses according to ANSI standards, under proper supervision.
12.15	Dispense spectacles under the proper supervision and within the optometric assistant scope of practice.

<b>Course Number: OPT0722</b>	
<b>Occupational Completion Point: B</b>	
<b>Optometric Assistant 2 – 642 Hours – SOC Code 29-2081</b>	
13.0	Demonstrate knowledge of basic ocular anatomy and physiology. -- The student will be able to:
13.01	Demonstrate knowledge of ocular anatomy.
13.02	Demonstrate knowledge of ocular physiology.
13.03	Demonstrate knowledge of pathological and functional disorders of the eye.

13.04	Demonstrate the knowledge of injuries of the eye and recognize sight-threatening emergencies.
13.05	Correlate general health as it relates to ocular health.
14.0	Report and record patient information. -- The student will be able to:
14.01	Properly identify patients, to avoid medical errors.
14.02	Identify data to be included in a patient history and additional forms that comprise a patient record.
14.03	Take and record patient histories from patient, parent, and/or caregiver.
14.04	Use appropriate medical and vision care terminology and abbreviations.
14.05	Communicate knowledge to patient, family and/or caregiver to assist with the plan of care, as directed by the doctor.
15.0	Perform and assist in procedures used in visual testing. -- The student will be able to:
15.01	Measure and record visual acuity.
15.02	Demonstrate knowledge of amplitude of accommodation.
15.03	Measure and record color vision.
15.04	Measure and record stereo acuity.
15.05	Measure and record pupil evaluation.
15.06	Evaluate Ocular motility including:
15.06.1	Extra Ocular Motility
15.06.2	Convergence
15.06.3	Cover testing
15.06.4	Worth 4 dot
15.07	Perform eye drop instillation.
15.08	Identify instruments and tools used in comprehensive eye exams.
15.09	Describe the importance of equipment maintenance and proper disinfection.
16.0	Perform special procedures. -- The student will be able to:
16.01	Measure and record keratometry.
16.02	Describe various methods of and the importance of retinal imaging.
16.03	Measure visual field with confrontation and Amsler testing; Identify Humphreys and Goldmann visual field testing procedures.



16.04	Demonstrate knowledge of slit lamp biomicroscope procedures.
16.05	Demonstrate knowledge of techniques to evaluate tear film.
16.06	Identify various methods for recording intraocular pressure; measure and record intraocular pressure.
16.07	Demonstrate knowledge of refraction techniques.
16.08	Identify types of low vision aids and resources available for those that need it.
16.09	Demonstrate knowledge of vision therapy.
16.10	Demonstrate knowledge of diagnostic and therapeutic drugs including knowledge of the color coding system for topical ocular medications.
17.0	Demonstrate knowledge of contact lenses. -- The student will be able to:
17.01	Assist patients with contact lens procedures including:
17.01.1	Insertion and removal
17.01.2	Cleaning and care
17.01.3	Compliance of soft and RGP lenses
17.02	Demonstrate knowledge of the fitting process for both rigid and soft contact lenses.
17.03	Demonstrate knowledge of the ordering process for contact lenses including the Fairness to Contact Lens Consumers Act.
17.04	Identify contact lens options; manufacturer, brand, design, power, bc, diam, wearing schedule, materials.
17.05	Demonstrate knowledge of the advantages and disadvantages of various contact lens materials and designs.
17.06	Identify instruments used to verify contact lenses.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Students are prepared to assist in performing tests to determine defects in vision, preparing and fitting eyeglasses and contact lenses, and administering corrective eye exercises and other treatments under the supervision of a person licensed under FL Statutes 458, 459, 463 or 484.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Orthopedic Technology  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H170800
CIP Number	0351092300
Grade Level	30, 31
Standard Length	800 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2099 Health Technologists and Technicians, All Other 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	Ortho Tech 7 G REG NUR Ortho 7 G	90 hours	31-9099
B	PHT0090	Orthopedic Technologist 1		355 hours	29-2099
	PHT0091	Orthopedic Technologist 2		355 hours	

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the health care delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Describe anatomical structure and function of the human body related to the practice of orthopedics.
- 13.0 Discuss diseases and injuries of the musculoskeletal system and related structures.
- 14.0 Demonstrate physical assessment of the orthopedic patient.
- 15.0 Perform routine maintenance of equipment.
- 16.0 Disinfect and sterilize materials and equipment.
- 17.0 Demonstrate knowledge of the use of radiology in orthopedic technology.
- 18.0 Demonstrate ability to apply, adjust, and remove all common orthopedic devices.
- 19.0 Assist the orthopedic physician with various treatments and procedures.
- 20.0 Assist the orthopedic surgeon in the operating room using aseptic technique.
- 21.0 Demonstrate use of exercise, assistive/supportive devices and specialized equipment.
- 22.0 Instruct other healthcare providers, patients and families to perform selected treatment procedures and functional activities.
- 23.0 Identify architectural barriers.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Orthopedic Technology  
Career Certificate Program Number: H170800**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: PHT0090  
Occupational Completion Point: B  
Orthopedic Technologist 1 – 355 Hours – SOC Code 21-9099**

<b>12.0</b>	<b>Describe anatomical structure and function of the human body related to the practice of orthopedics. – The student will be able to:</b>
12.01	Describe the composition, properties and functions of connective tissue.
12.02	Discuss the generalized functions of the skeletal system.
12.03	Identify the major anatomical structures found in a typical long bone.
12.04	Discuss the microscopic structure of bones and cartilage.
12.05	Explain how bones are formed, grow and remodeled.
12.06	Identify the two major subdivisions of the skeleton and list the bones found in each area.
12.07	List and compare the major types of joints in the body.
12.08	Identify and discuss the structure and function of the three major types of muscle tissue.
12.09	Discuss the microscopic structure of a skeletal muscle.
12.10	Explain muscle stimulation, movement and contraction.



12.11	Identify the major muscles of the body and their primary function.
12.12	Discuss the most common types of movement produced by skeletal muscles.
12.13	Describe the role of tendons and ligaments in the musculoskeletal system.
13.0	Discuss diseases and injuries of the musculoskeletal system. – The student will be able to:
13.01	Explain the body's general response to injury.
13.02	Discuss the process of tissue healing.
13.03	Describe the pathophysiology of connective tissue diseases and degenerative joint disorders.
13.04	Discuss the assessment and treatment of patients with connective tissue diseases and joint disorders.
13.05	Identify the various types of joint replacement.
13.06	Discuss the role of the orthopedic technician in pre and post-operative care and therapy of joint replacement patients.
13.07	Discuss the common types of strains and sprains and treatment procedures.
13.08	Classify the different types of bone fractures.
13.09	Describe the physiological stages that occur in bone healing.
13.10	Discuss the major complications of fractures, their signs and symptoms and management.
13.11	Compare the types of medical treatment for fractures including reduction and fixation.
13.12	Describe common therapeutic measures for fractures including casts, splints, immobilizers, traction, crutches, walkers, and canes.
13.13	Describe specific types of fractures regarding their location in the body.
14.0	Demonstrate physical assessment of the orthopedic patient. – The student will be able to:
14.01	Interview patient and family in order to obtain a complete history of the patient's complaints/conditions by using effective interviewing techniques.
14.02	Conduct physical examination of the patient in order to provide pertinent information to the physician by using standard examination techniques.
14.03	Identify critical elements to include with documentation of physical assessment of the patient.
14.04	Use correct medical terminology and proper techniques to document orthopedic conditions or complications on the patient's chart.
15.0	Perform routine maintenance of equipment. – The student will be able to:

15.01	Assemble, inspect, adjust and disassemble orthopedic equipment such as, frames, weights, cables, pulleys, and other support devices as needed.
15.02	Clean, organize, and maintain adequate levels of orthopedic equipment for use.
15.03	Complete repair order forms for broken equipment.
16.0	Disinfect and sterilize materials and equipment. – The student will be able to:
16.01	Discuss the principles of infection control, aseptic technique, and sterilization.
16.02	Disinfect used equipment and materials using proper antiseptics and disinfectants.
16.03	Prepare materials and equipment for sterilization.
17.0	Demonstrate knowledge of the use of radiology in orthopedic technology. – The student will be able to:
17.01	Discuss the history of radiology and its application in orthopedics.
17.02	Explain the basics of radiographic image production and the various types of permanent imaging relating to orthopedics.
17.03	Demonstrate the ability to interpret simple fractures and dislocations on radiographic film.
17.04	Discuss the role of the orthopedic technologist in obtaining and examining radiographs.

<b>Course Number: PHT0091</b>	
<b>Occupational Completion Point: B</b>	
<b>Orthopedic Technologist 2 – 355 Hours – SOC Code 21-9099</b>	
18.0	Demonstrate ability to apply, adjust, and remove all common orthopedic devices in order to comply with physician's orders. – The student will be able to:
18.01	Discuss the different types of materials and their properties used in constructing casts, splints and immobilizers.
18.02	Identify the various types of upper and lower extremity casts/splints applicable to specific orthopedic conditions requiring treatment.
18.03	Apply upper extremity cast/splint to patient using accepted casting/splinting practices and techniques.
18.04	Apply lower extremity cast/splint to patient using accepted casting/splinting practices.
18.05	Discuss the specific orthopedic conditions associated with torso casts/splints and specialty casts/splints.
18.06	Apply specialty cast/splint to patient using accepted casting/splinting practices and techniques.
18.07	Describe the complications associated with casting/splinting.

18.08	Utilize cast/splint removal equipment to remove casts/splints using accepted practices and techniques.
18.09	Utilize cast/splint removal equipment to perform specific procedures, using wedging, windowing, and uni/bivalving techniques.
18.10	Apply orthopedic devices to patient by ensuring proper fit and placement.
18.11	Apply pre-fabricated orthotics and orthopedic appliances to patient by ensuring proper fit.
19.0	Assist the orthopedic physician with various treatments and procedures. – The student will be able to:
19.01	Obtain equipment in order to apply traction therapy to patient by selecting appropriate items for the traction apparatus.
19.02	Demonstrate ability to construct the specific type of traction ordered.
19.03	Apply traction apparatus to bed in order to prepare for application of skin or skeletal traction by using accepted practices and techniques.
19.04	Drape, scrub, and assist in the application of skeletal traction therapy using accepted aseptic practices and techniques.
19.05	Apply skin traction therapy to patient using accepted aseptic practices and techniques.
19.06	Discuss the various types of traction applicable to specific orthopedic conditions requiring traction.
19.07	Explain the basic biomechanics of traction therapy.
19.08	Describe the contraindications associated with traction therapy.
19.09	Assist in discontinuing traction therapy using accepted practices and techniques.
20.0	Assist the orthopedic surgeon using aseptic technique. – The student will be able to:
20.01	Assist the surgeon during reductions by supplying and applying the appropriate materials.
20.02	Apply and manage post-operative dressing on wounds following aseptic practices and techniques.
21.0	Demonstrate use of exercise, assistive/supportive devices and specialized equipment. – The student will be able to:
21.01	Describe the benefits of exercise, stretching, conditioning and strength training in rehabilitative therapy.
21.02	Recognize and assist in exercising techniques used in orthopedic therapy.
21.03	Discuss, demonstrate and teach the proper use of canes, crutches and walkers.
21.04	Describe and demonstrate the various types of wheelchairs and their use.
21.05	Perform safe body mechanics and patient transfer techniques.

21.06	Define orthotics and state the importance of proper fit.
21.07	Discuss upper and lower extremity prosthetics in terms of types of amputations and prosthetics available.
21.08	Identify and find solutions for common problems associated with prosthetic management.
21.09	Assist and instruct patients in the use of orthotic/prosthetic devices.
22.0	Instruct other healthcare providers, patients and families to perform selected treatment procedures and functional activities. – The student will be able to:
22.01	Explain specific treatment plans for patients to all parties involved.
22.02	Describe desired outcomes of selected treatment procedures or functional activities.
22.03	Detail the types and functions of equipment being used in treatment of patients and their application.
22.04	Discuss safety issues and proper procedural methods concerning use of orthopedic equipment and treatment protocol.
23.0	Identify architectural barriers. – The student will be able to:
23.01	Identify environmental factors that are potential architectural barriers.
23.02	Determine which aspects of the patient's functional level and their ambulatory/mobility equipment are subject to architectural problems.
23.03	Describe action required to remediate barriers.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

The graduate of this program is prepared to make application for certification by examination to the:

NATIONAL BOARD FOR CERTIFICATION OF ORTHOPEDIC TECHNOLOGISTS (NBCOT)  
4736 ONONDAGA BLVD., #166  
SYRACUSE, NY 13219  
(866) 466-2268  
TO EARN CERTIFICATION AS A ORTHOPEDIC TECHNOLOGIST CERTIFIED (OTC)

### **OR**

AMERICAN SOCIETY OF ORTHOPEDIC PROFESSIONALS (ASOP)  
625 6TH AVE  
SUITE 365  
ST. PETERSBURG, FL 33701  
(727) 394-1700  
TO EARN CERTIFICATION AS A REGISTERED ORTHOPEDIC TECH (ROT)

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

## **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Emergency Medical Responder  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H171500
CIP Number	0351081000
Grade Level	30, 31
Standard Length	190 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	53-3011 Ambulance Drivers and Attendants, Except Emergency Medical Technicians 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	N/A

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The content includes but is not limited to planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues. Clinical learning experiences are an integral part of this program.

This is an instructional program that prepares individuals to provide initial care to sick or injured persons or as ambulance drivers and attendants SOC 53-3011. An Emergency Medical Responder may use this training for employment. The Emergency Medical Responder is the first to arrive at the scene of an injury but does not have the primary responsibility for treating and transporting the injured person(s). Emergency Medical Responders may include law enforcement, life guard, fire services or basic life support non-licensed personnel who act as part of an organized emergency medical services team.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

## Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G	90 hours	31-9099
B	EMS0050	Emergency Medical Responder	PARAMEDIC @7 7G MED PROF 7 G EMT 7G	100 hours	53-3011



## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder.
- 13.0 Demonstrate an ability to communicate effectively as part of the EMS team.
- 14.0 Demonstrate an understanding of medicolegal aspects.
- 15.0 Determine and record vital signs of a sick or injured person.
- 16.0 Use medical identification devices.
- 17.0 Conduct a primary assessment of problems that are a threat to life if not corrected immediately.
- 18.0 Demonstrate BLS procedures.
- 19.0 Recognize and control bleeding.
- 20.0 Recognize and control shock.
- 21.0 Understand the importance of emergency medications.
- 22.0 Demonstrate understanding of airway management, respiration and artificial ventilation.
- 23.0 Provide secondary assessment.
- 24.0 Identify musculo-skeletal injuries.
- 25.0 Demonstrate proper spinal motion restriction of a Cervical/Spinal injury.
- 26.0 Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs).
- 27.0 Provide emergency evacuation and transfer of a sick and/or injured person.
- 28.0 Identify and provide initial care for a sick and/or injured patient.
- 29.0 Identify and care for patients who are in special situations.
- 30.0 Provide triage to victims of multiple casualty incidents.
- 31.0 Recognize life-threatening situations.
- 32.0 Recognize entrapment situations.
- 33.0 Assist with emergency childbirth.
- 34.0 Identify critical incident stressors.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Emergency Medical Responder  
Career Certificate Program Number: H171500**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

CTE Standards and Benchmarks	
12.0	Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder. -- The student will be able to:
12.01	Describe the role of Emergency Medical Responder as a member of the EMS team.
12.02	List and describe the responsibilities of the Emergency Medical Responder for the provision of pre-hospital emergency care within the local EMS system.
12.03	Describe principles of safely operating a ground ambulance.
12.04	Understand the guidelines of operating safety in and around a landing zone during air medical operations and transport.
12.05	Implement appropriate Joint Commission patient safety goals.
13.0	Demonstrate an ability to communicate effectively as part of the EMS team. -- The student will be able to:
13.01	Demonstrate the proper procedure for the transfer of patient care to other EMS personnel.
13.02	Describe information regarding a patient's condition and treatment that need to be communicated.
13.03	Communicate the Emergency Medical Responder's observations and actions to whomever patient care is transferred.
13.04	Describe and apply the principles of communicating with patients in a manner that achieves a positive relationship.

## CTE Standards and Benchmarks

13.05	Recognize simple medical prefixes, suffixes, combining vowels, and words.
14.0	Demonstrate an understanding of medicolegal aspects. – The student will be able to:
14.01	Describe and demonstrate an understanding of the medicolegal aspects of an Emergency Medical Responder's provision of emergency medical care in the jurisdiction having authority, including, but not limited to, duty to act, standard of care, consent to care, forcible restraint, abandonment, documentation, and any applicable Good Samaritan Laws.
14.02	Practice within medicolegal standards.
15.0	Determine and record vital signs of a sick or injured person. – The student will be able to:
15.01	Determine and record skin color, temperature, and moistness.
15.02	Demonstrate ability to accurately measure and record vital signs including manual blood pressure.
16.0	Use medical identification devices. – The student will be able to:
16.01	Identify the most commonly used digital medical identification devices.
16.02	Apply the information contained on or in the medical identification devices to patient assessment and patient care procedures.
17.0	Conduct a primary assessment of problems that are a threat to life if not corrected immediately. – The student will be able to:
17.01	Determine and record the level of consciousness of the injured person including person, place, time, and events.
17.02	Assess for an inadequate airway, inadequate respiration's, inadequate circulation and profuse bleeding.
17.03	Recognize when immediate correction is necessary.
17.04	Assess patient and determine if the patient has a life threatening condition.
17.05	Use spinal precautions as appropriate
18.0	Demonstrate BLS procedures. – The student will be able to:
18.01	Establish and maintain an open airway using both manual and mechanical airway techniques.
18.02	Restore breathing and circulation by means of cardiopulmonary resuscitation (CPR).
18.03	Demonstrate proficiency in the use of an automated external defibrillator (AED).
19.0	Recognize and control bleeding. – The student will be able to:
19.01	Identify items that can be used to control external bleeding and minimize the contamination of open wounds.

## CTE Standards and Benchmarks

19.02	Apply pressure dressings, tourniquets, and wound packing that will control bleeding/hemorrhage and minimize the contamination of open wounds.
19.03	Identify the likelihood of internal bleeding through observations of signs, symptoms and mechanisms of injury.
19.04	Care for a patient who exhibits the signs and symptoms of internal bleeding.
19.05	Apply current trauma treatment standards when applying a tourniquet, which may include Pre-Hospital Trauma Life Support (PHTLS) standards.
20.0	Recognize and control shock. – The student will be able to:
20.01	Recognize the likelihood that shock may occur or be present based on patient assessment and observation of a mechanism of injury.
20.02	Provide anti-shock measures as a part of routine patient care.
21.0	Understand the importance of emergency medications. – The student will be able to:
21.01	Understand the advantages, disadvantages, and techniques of self and peer administration of an intramuscular injection by auto injector.
21.02	Describe the names, effects, indications, routes of administration, and dosages for specific medications (I.E chemical antidote auto injector devices).
21.03	Demonstrate how to observe and respond to patient's need for narcotic antagonists.
21.04	Demonstrate accurate dosage calculation.
21.05	Demonstrate the six rights of administering narcotic antagonists.
21.06	Demonstrate how to administer narcotic antagonists.
21.07	Document administration of narcotic antagonists and patient's response on medical record.
21.08	Observe and communicate effects of medications to the patient's assigned EMT/Paramedic.
22.0	Demonstrate understanding of airway management, respiration, and artificial ventilation. – The student will be able to:
22.01	Apply knowledge of anatomy and physiology to airway management procedures (I.E. oxygenation and perfusion).
22.02	Understand the pathophysiology of respiratory dysfunction.
22.03	Use available mechanical devices to assure the maintenance of an open airway and assist ventilation according to American Heart Association (AHA) standards.
22.04	Demonstrate proficiency in supplemental oxygen therapy including portable oxygen cylinder and oxygen delivery devices.

## CTE Standards and Benchmarks

22.05	Describe and demonstrate airway management utilizing of upper airway suctioning.
23.0	Provide secondary assessment. – The student will be able to:
23.01	Conduct a methodical head-to-toe physical examination to discover conditions not found during the primary assessment.
23.02	Interview the sick or injured person to obtain facts relevant to the person's condition.
23.03	Interview co-workers, witnesses, family members, or other individuals to obtain facts relevant to the person's condition.
24.0	Identify musculo-skeletal injuries. – The student will be able to:
24.01	Identify the various types of musculo-skeletal injuries.
24.02	Immobilize and otherwise care for suspected fractures, dislocations, sprains and strains with available supplies and equipment, including commercially available and improvised devices.
24.03	Demonstrate an understanding of the function and need for traction splints.
25.0	Demonstrate proper spinal motion restriction of a cervical/spinal injury. – The student will be able to:
25.01	Identify need for spinal motion restriction.
25.02	Maintain in-line spinal motion restriction of cervical spine.
25.03	Place proper fitting rigid extrication-type cervical collar.
25.04	Place patient in supine position on appropriate spine board based on patient condition.
25.05	Secure patient to spinal motion restriction device.
26.0	Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs). – The student will be able to:
26.01	Identify need for extremity immobilization.
26.02	Assesses motor, sensory, and distal circulation in extremities.
26.03	Place proper fitting splint on extremity.
26.04	Reassesses motor, sensory, and distal circulation in extremities.
27.0	Provide emergency evacuation and transfer of a sick and/or injured person. – The student will be able to:
27.01	Describe situations when a person should be evacuated or transferred.

## CTE Standards and Benchmarks

27.02	Use the most appropriate assist, drag or carry (alone or with a partner) to move a sick or injured person from a dangerous location to a safe place.
27.03	Maintain safety precautions during evacuation and transfer.
27.04	Demonstrate an understanding of the purpose and use of transfer methods for patients including stair chairs and stretchers.
28.0	Identify and provide initial care for a sick and/or injured patient. – The student will be able to:
28.01	Identify and care for patients with non-traumatic chest pain, utilizing patient assessment.
28.02	Identify and care for patients experiencing respiratory distress, utilizing patient assessment.
28.03	Identify and care for patients experiencing a diabetic emergency, utilizing patient assessment.
28.04	Identify and care for a patient who is experiencing a seizure, utilizing patient assessment.
28.05	Identify and care for a patient who has ingested, inhaled, absorbed or been injected with a poisonous substance.
28.06	Identify and care for a patient who is in an altered state of consciousness, utilizing patient assessment.
28.07	Identify and care for a patient who is experiencing a stroke, utilizing patient assessment.
28.08	Identify and care for a patient who has a foreign body in the eye, utilizing patient assessment.
28.09	Identify and care for a patient with thermal, chemical, or electrical burns, determining the severity including degree, body surface area, type, and location.
28.10	Identify and care for a patient suffering from an environmental emergency including heat cramps, heat exhaustion, heat stroke, and frostbite, utilizing patient assessment.
29.0	Identify and care for patients who are in special situations. – The student will be able to:
29.01	Identify patients who have special needs (including but not limited to abuse, domestic violence, and sex trafficking).
29.02	Care for injured/ill children.
29.03	Care for the injured/ill elderly.
29.04	Care for the injured/ill physically disabled.
29.05	Care for the injured/ill developmentally disabled.
30.0	Provide triage to victims of multiple casualty incidents. – The student will be able to:
30.01	Categorize the victims of multiple casualty incidents according to the severity of injury or illness based on patient assessments.

## CTE Standards and Benchmarks

30.02	Use triage tags or other identification devices available locally to indicate priorities for pre-hospital emergency care and transportation to medical facilities.
30.03	Work as a member of a team to perform triage at locations of multiple casualty incidents.
30.04	Work as a member of a team to perform patient assessments at locations of multiple casualty incidents.
30.05	Work as a member of a team to carry out patient care procedures at the locations of multiple casualty incidents.
30.06	Demonstrate knowledge of the operating procedures during a terrorist event or during a natural or man-made disaster.
30.07	Demonstrate a basic understanding of the Incident Command System (ICS) implemented by the Federal Emergency Management Agency (FEMA),
30.08	Discuss and demonstrate Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 (q)(6)(i) – First Responder Awareness Level <a href="http://www.hazwopercertification.net/">http://www.hazwopercertification.net/</a>
31.0	Recognize life-threatening situations. – The student will be able to:
31.01	Take steps to minimize the chance of injury or death to all involved when confronted with a potentially life-threatening situation based on scene assessment.
32.0	Recognize entrapment situations. – The student will be able to:
32.01	Identify accident-related hazards and undertake hazard control measures consistent with the capabilities of the Emergency Medical Responder and available equipment.
32.02	Recognize available equipment that is used to safely gain access to persons who are entrapped.
32.03	Recognize available equipment that is used to safely disentangle persons from mechanisms of entrapment.
32.04	Identify which agencies to notify for assistance with entrapment situations.
33.0	Assist with emergency childbirth. – The student will be able to:
33.01	Evaluate a mother to determine whether delivery is imminent.
33.02	Assist with a normal delivery.
33.03	Care for the mother and baby.
33.04	Identify abnormal childbirth situations and care for the mother and baby within the Emergency Medical Responder’s capabilities.
34.0	Identify critical incident stressors. – The student will be able to:
34.01	Identify stressors which may affect the performance of an Emergency Medical Responder.



**CTE Standards and Benchmarks**

34.02 Identify stressors which may affect the behavior of a sick or injured person.

34.03 Carry out procedures to minimize critical incident stress.

34.04 Identify signs and symptoms of PTSD and the resources available for treatment.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

In order for students to take the NREMT003 Emergency Medical Responder exam the program must be approved by the National Registry for Emergency Medical Technicians. To receive approval from NREMT each program must be “authorized” by the Bureau of Emergency Medical Services by completing the instructor qualifications form required by Bureau of EMS.

The Emergency Medical Responder instructor shall issue to each student documentation of successful course completion which shall include date of issuance, student's name, name of sponsoring agency (DOE), name of training agency, and instructor's printed name and signature, plus the wording "issued pursuant to section 401.435 F.S." The instructor must also maintain on file following course completion, a roster listing the names of students who successfully completed the course, the dates and location of the course, and the name of the instructor.

The student performance standards for Emergency Medical Responder were adapted and condensed from U. S. Department of Transportation Emergency Medical Services; Emergency Medical Responder Training Course, National Standard Curriculum Instructors Lesson Plan and American Society for Testing and Materials, Committee F-30. Administrators and instructors should refer to these materials for additional details.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Mental Health Technician  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**Career Certificate Program**

Program Number	H180100
CIP Number	0351150204
Grade Level	30, 31
Standard Length	480 hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2053 Mental Health Technicians 31-1014 Nursing Assistants 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 9 Language: 9 Reading: 9

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of Health Science career cluster.

The purpose of this program is to prepare students for employment as mental health technicians, psychiatric aides or psychiatric technicians (SOC 29-2053 Mental Health Technicians) and nursing assistants (SOC 31-1014 Nursing Assistants). Additional certification and licensure opportunities (i.e. Certified Recovery Peer Specialist, Certified Community Health Worker and Certified Behavioral Health Technician) are noted at the end of the document under Special Notes.

The content includes but is not limited to nursing assistant skills, physical assessment, patient teaching and education, wellness and disease concepts, HIV/AIDS, growth and development, mental illness, anxiety, bipolar disorder, depression, schizophrenia, psychosis, personality disorders, emergency and crisis intervention, Alzheimer’s Disease and dementia, intellectual developmental disabilities, substance abuse, group therapy,

stress management, employability skills, safety and security issues, legal and ethical, therapeutic communication, documentation, clinical skills including hygiene, vital signs and CPR.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

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To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G LPN 7 G*	90 hours	31-9099
B	HCP0121	Nurse Aide and Orderly (articulated)	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	75 hours	31-1014
C	HCP0810	Mental Health Technician	REG NURSE 7 G	315 hours	29-2053

**\*The LPN 7 G district issued certification is a practical nurse. A practical nurse can only be utilized as an instructor of the CNA training program when they are supervised by the program coordinator which must be a registered nurse. Please refer to F.A.C. 64B9-15.005 for requirements.**

**Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Use verbal and written communications specific to nurse assisting
- 13.0 Demonstrate legal and ethical responsibilities specific to nurse assisting
- 14.0 Perform physical comfort and safety functions specific to nurse assisting
- 15.0 Provide personal patient care
- 16.0 Perform patient care procedures
- 17.0 Apply principles of nutrition
- 18.0 Provide care for geriatric patients
- 19.0 Apply the principles of infection control specific to nursing assisting
- 20.0 Provide biological, psychological, and social support
- 21.0 Perform supervised organizational functions, following the patient care plan.
- 22.0 Assist with restorative (rehabilitative) activities
- 23.0 Demonstrate and implement knowledge of mental health, mental illness, including substance use/ abuse and addiction.
- 24.0 Identify the spectrum of interventions and treatment for mental health problems and the types of delivery of care in the stabilization and rehabilitation of the mental health patient.
- 25.0 Demonstrate an understanding of various mental health disorders, observable signs and symptoms and general interventions to be implemented by the mental health technician.
- 26.0 Provide therapeutic communication, knowledge of therapeutic relationship, and support for the mental health patient.
- 27.0 Perform skills and documentation related to caring for and supervising the mental health patient in various types of treatment settings.
- 28.0 Implement crisis intervention techniques and emergency services if necessary in the mental health setting.
- 29.0 Participate as a member of a multidisciplinary team in the planning and implementation of care and treatment for individual patients.
- 30.0 Provide patient education and information on the various resources and support groups available for the mentally ill, substance using or addictive client and family members.
- 31.0 Conduct individual, group and family presentations / discussions to facilitate patient recovery and wellness.
- 32.0 Perform pharmacological aspects of care as directed (residential and assisted living facility settings).

**Florida Department of Education  
Student Performance Standards**

**Program Title: Mental Health Technician  
Career Certificate Program Number: H180100**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

**Career Certificate Program Course Number: HSC0003  
Occupational Completion Point: A  
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099**

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document.

**Course Number: HCP0121  
Occupational Completion Point: B  
Nurse Aide and Orderly (Articulated) – SOC Code 31-1014**

12.0	Use verbal and written communications specific to nurse assisting. – The student will be able to:
12.01	Obtain specified data from patient and family.
12.02	Utilize verbal and written information to assist with the patient's plan of care.
12.03	Demonstrate use of the communication system.
13.0	Demonstrate legal and ethical responsibilities specific to nurse assisting. – The student will be able to:
13.01	Discuss and demonstrate legal and ethical behavior within the nursing assistant scope of practice including role limitations in Florida.
13.02	Describe the purpose of the chain of communication to resolve conflict.
13.03	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.04	Demonstrate safe standards of patient care including prevention and quality of care
13.05	Exhibit behavior supporting and promoting patients' and/or residents' rights.
13.06	Recognize potential for and prevention of medical errors.
13.07	Practice the proper procedures to follow regarding medical errors.



13.08	Follow policies and procedures affecting the health, safety, and well-being of patients.
13.09	Recognize and report signs of substance abuse.
13.10	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.
13.11	Define Omnibus Budget Reconciliation Act (OBRA).
13.12	Define Minimum Data Set (MDS).
14.0	Perform physical comfort and safety functions specific to nurse assisting. – The student will be able to:
14.01	Implement appropriate regulatory and accrediting agency patient safety guidelines.
14.02	Maintain safe patient units, equipment, and a comfortable environment.
14.03	Maintain service areas on the units including supplies and equipment.
14.04	Observe, report, and record changes in the patient's behavior as needed, including mental awareness.
14.05	Demonstrate adjustment of bed and side-rails according to facility policy.
14.06	Demonstrate and assist patient to dangle.
14.07	Demonstrate lifting, supporting and transferring patients from bed to chair, bed to bed, and bed to stretcher, including the use of the various assistive devices and equipment while utilizing proper body mechanics and patient safety measures
14.08	Demonstrate the proper use of a gait/transfer belt in both transfer and ambulation.
14.09	Assist patient in ambulation, including the use of crutch, cane, or walker.
14.10	Demonstrate the proper wheelchair safety techniques and assist patient as needed with use.
14.11	Apply supportive devices as directed (e.g., footboard, over-bed cradle, alternating pressure mattress).
14.12	Assist patient with care and use of prosthetic/orthotic devices.
14.13	Describe emergency procedures utilized in the clinical area(s) and the role of the nursing assistant in these procedures.
15.0	Provide personal patient care. -- The student will be able to:
15.01	Perform bed bath; observe and report changes in a patient including skin and level of consciousness.
15.02	Assist with shower or tub bath, including the use of specialty tubs or prepackaged disposable-bagged bath.
15.03	Administer back rub with bath and as needed.
15.04	Assist patient with hair care utilizing sink, tub, shower, bed or shower cap.

15.05	Demonstrate the use of a safety and/or electric razor to shave the patient.
15.06	Demonstrate how to groom patient, including hair, skin, foot, hand and nail care.
15.07	Assist with and/or administer oral hygiene including denture care.
15.08	Assist patient to dress.
15.09	Assist patient with toileting using various types of restorative and rehabilitative equipment.
15.10	Assist patient with use of bedpan (standard and fracture)
15.11	Assist with bowel and bladder training.
15.12	Assist and/ or provide perineal care.
15.13	Empty, measure and record urinary output and/or drainage.
15.14	Demonstrate application and use of a leg bag, leg strap and dignity bag.
15.15	Monitor and assist with the drainage of urostomy bags and colostomy bags.
15.16	Assist patient with both donning and doffing prosthesis and brace.
15.17	Assist patient with meals.
15.18	Describe the relationships of body systems when providing patient care.
15.19	Recognize abnormal signs and symptoms of common diseases and conditions when providing patient care.
16.0	Perform patient care procedures. – The student will be able to:
16.01	Demonstrate ability to accurately measure, record and report vital signs.
16.02	Assist with the admission of a patient and/or resident.
16.03	Assist with the admission, transfer, and discharge of a patient and/or resident.
16.04	Maintain patient-belongings list.
16.05	Make unoccupied/occupied bed.
16.06	Provide passive range-of-motion exercises.
16.07	Apply anti-embolic hose and sequential compression devices.
16.08	Understand and demonstrate proper collection of routine, timed urine and clean catch urine specimens.

16.09	Record fluid intake and output (I&O).
16.10	Observe, record, and report patient's emesis.
16.11	Monitor and provide urinary catheter care and drainage systems.
16.12	Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.
16.13	Collect stool specimen.
16.14	Assist with the collection of a sputum specimen.
16.15	Assist the nurse with care of the patient with complex medical needs.
16.16	Assist patient to apply binders.
16.17	Care for patient in skin and skeletal traction.
16.18	Assist with pre-operative and post-operative patient care.
16.19	Reinforce dressings under the supervision of the RN/LPN.
16.20	Obtain and record an apical pulse.
16.21	Provide cast care and/or pin care.
16.22	Provide care for eyeglasses, artificial eyes, and contact lens.
17.0	Apply principles of nutrition. – The student will be able to:
17.01	Identify nutrients and food groups.
17.02	Develop a basic food plan.
17.03	Describe special diets.
17.04	Check patient's diet tray for accuracy.
17.05	Monitor and document Nutritional Intake.
17.06	Identify and implement regional, cultural and religious food guidelines/preferences.
17.07	Demonstrate knowledge of the need for thickened liquids and fluid consistency.
17.08	Identify methods of maintaining fluid balance including encouraging and restricting fluids.
18.0	Provide care for geriatric patients. – The student will be able to:

18.01	Identify and assist with methods and procedures to prevent pressure ulcers.
18.02	Identify and assist with methods to prevent falls in the elderly.
18.03	Identify and assist with safety principles as related to the elderly.
18.04	Describe general characteristics, particular needs, and age related changes of the elderly.
18.05	Identify attitudes and living habits that promote positive mental and physical health for the elderly.
18.06	Distinguish between fact and fallacy about the aging process.
18.07	Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis.
18.08	Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimers.
18.09	Provide and involve patients in diversional activities.
18.10	Identify common alterations in elderly patient behavior.
18.11	Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).
18.12	Demonstrate awareness of common behaviors in drug use and abuse in the elderly.
18.13	Report concerns to the nurse and appropriate authorities related to drug use and abuse in the elderly patient.
18.14	Identify the need for community resources and services available to the elderly and their caregiver.
18.15	Identify components of the grief process.
18.16	Demonstrate an understanding of end of life care, hospice and palliative care.
19.0	Apply the principles of infection control specific to nursing assisting. – The student will be able to:
19.01	Discuss transmission-based precautions.
19.02	Identify the chain of infection.
19.03	Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.
19.04	Apply the proper use of personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.
19.05	Follow isolation procedure with food tray, PPE, and other supplies/equipment.
19.06	Collect specimen from patient in isolation.

20.0	Provide biological, psychological, and social support. – The student will be able to:
20.01	Discuss family roles and their significance to health.
20.02	Respond to patient and family emotional needs.
21.0	Perform supervised organizational functions, following the patient care plan. – The student will be able to:
21.01	Organize and prioritize patient-care assignments.
21.02	Complete assignments accurately and in a timely manner.
22.0	Assist with restorative (rehabilitative) activities. – The student will be able to:
22.01	List the purposes of restorative (rehabilitation) program.
22.02	Assist patient with specified restorative (rehabilitation) needs.
22.03	Assist patients/residents to reach the optimum level of independence.

**Course Number: HCP0810**

**Occupational Completion Point: C**

**Mental Health Technician – 315 Hours – SOC Code 29-2053**

23.0	Demonstrate and implement knowledge of mental health, mental illness, including substance use/abuse and addiction. — The student will be able to:
23.01	Define and discuss mental health.
23.02	Define and discuss mental illness and contributing factors.
23.03	Display understanding of The American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (DSM-5).
23.04	Display awareness of the current trends and issues in the field of mental health i.e. Healthy People 2020 Mental Health Objectives, Office of Disease Prevention and Health Promotion (ODPHP) <a href="http://www.healthypeople.gov">www.healthypeople.gov</a> .
23.05	Define and discuss substance use/abuse; addiction; co-occurring disorders and comorbidity.
23.06	Demonstrate knowledge of the 10 classes of drugs with Substance –Related and Addictive Disorders including prevalence, risks, consequences, intoxication, and withdrawal.
23.06.01	Alcohol
23.06.02	Caffeine
23.06.03	Cannabis
23.06.04	Hallucinogens
23.06.05	Inhalants
23.06.06	Opioids

	23.06.07	Sedatives, Hypnotics and Anxiolytics
	23.06.08	Stimulants
	23.06.09	Tobacco
	23.06.10	Other - synthetic drugs and bath salts
	23.07	Implement knowledge of Maslow's hierarchy of needs, physical responses to stress, psychological responses to stress, ego defense mechanisms, stages of grief, and stages of growth and development while caring for the mental health patient.
	23.08	Implement knowledge of cultural and spiritual considerations while caring for the mental health patient.
24.0	Identify the spectrum of interventions and treatment for mental health problems and the types of delivery of care in the stabilization and rehabilitation of the mental health patient. -- The student will be able to:	
	24.01	Display knowledge of prevention programs (i.e. health wellness, stress management, drug education programs, campaigns, parenting programs etc.).
	24.02	Display knowledge of early intervention programs.
	24.03	Display knowledge of different types of treatment and support including the following:
	24.03.01	inpatient hospitalization: crisis intervention, detoxification, stabilization and case management
	24.03.02	partial hospitalization programs
	24.03.03	long term care facilities
	24.03.04	community mental health centers and developmental disability centers
	24.03.05	clinics
	24.03.06	residential facilities
	24.03.07	mobile outreach units
	24.04	Describe and identify the multidisciplinary treatment team members and their roles in the stabilization and rehabilitation of the mental health patient.
	24.05	Display knowledge of the chain of command at various treatment settings.
	24.06	Describe the difference between an involuntary and voluntary admission.
	24.07	Display knowledge of Individual therapy, group therapy, cognitive behavioral therapy, family therapy, education groups, support groups, and self- help groups.
	24.08	Display knowledge of the process of recovery and relapse prevention.
	24.09	Demonstrate knowledge of the various types of complementary and integrative therapies.
	24.10	Demonstrate knowledge of pharmacology treatment, side effects and be able to identify patient reactions.
	24.11	Demonstrate knowledge of electroconvulsive therapy (ECT).
25.0	Demonstrate an understanding of various mental health disorders, observable signs and symptoms and general interventions to be implemented by the mental health technician. -- The student will be able to:	
	25.01	Discuss observable signs and symptoms and demonstrate general interventions to be implemented by the mental health technician for the following:

	25.01.01	Anxiety
	25.01.02	Obsessive Compulsive Disorder (OCD)
	25.01.03	Trauma and Stressor Related Disorders
	25.01.04	Substance Use and Addictive Disorders
	25.01.05	Schizophrenia and Psychosis
	25.01.06	Depression and Suicide
	25.01.07	Bipolar
	25.01.08	Personality Disorders
	25.01.09	Eating Disorders
	25.01.10	Neurodevelopment Disorders (i.e. autism spectrum disorder) and Neurocognitive Disorders (i.e. dementia)
26.0	Provide therapeutic communication, knowledge of therapeutic relationship, and support for the mental health patient. -- The student will be able to:	
26.01	Ensure quality patient care by developing good rapport and understanding of patient's needs.	
26.02	Display empathy, respect and nonjudgmental attitude to foster trust.	
26.03	Identify self-awareness issues that can enhance or hinder the mental health technician's role in establishing rapport with the mental health patient.	
26.04	Display knowledge and understanding of effective communication by discussing the communication process: (sender, message, and receiver).	
26.05	Convey simple, clear and direct communication when speaking with the mental health or developmentally disabled patient.	
26.06	Display good listening skills (show interest and concern, establish eye contact, eliminate distractions etc.) when patient is speaking.	
26.07	Apply knowledge of multicultural considerations while communicating.	
26.08	Demonstrate awareness of the mental health patient's nonverbal cues and behaviors.	
26.09	Display knowledge of therapeutic communication techniques and nontherapeutic communication blocks.	
26.10	Differentiate between direct and open-ended questioning.	
26.11	Demonstrate communication techniques, which enable an effective exchange of information, ideas and feelings.	
26.12	Reinforce and acknowledge patient of strengths, resources and that others care.	
26.13	Provide positive feedback for acceptable behaviors.	
26.14	Obtain meaningful information that may require an appropriate nursing intervention.	
26.15	Demonstrate professional relationship and communication with appropriate boundaries.	
27.0	Perform skills and documentation related to caring for and supervising the mental health patient in various types of treatment settings. -- The student will be able to:	

27.01	Demonstrate HIPAA, confidentiality, legal, and ethical considerations while caring for the mental health patient.
27.02	Provide safety and security measures for inpatient hospitalization including: 27.02.01 room search 27.02.02 frequent monitoring 27.02.03 suicide and homicide precautions 27.02.04 contraband check 27.02.05 elopement precautions 27.02.06 crisis intervention 27.02.07 documentation of the above
27.03	Provide safety and security measures for outpatient and residential facilities and display knowledge of outpatient emergency procedures.
27.04	Apply knowledge of infection control and blood borne pathogens on the mental health unit and while caring for the mental health patient.
27.05	Assist, supervise, and document the mental health patient's: vital signs, ADL's (activities of daily living: hygiene, bathing, dressing, nutrition and elimination); group attendance, and interactions with staff, patients, and visitors.
27.06	Execute purposeful and productive interactions with patients and staff members.
27.07	Maintains and adheres to schedule on unit.
27.08	Maintain a professional atmosphere for a safe and therapeutic environment including respect for boundaries, use of touch, distance zones, set consistent limits especially with manipulative behavior, reports violations and exploitive behaviors immediately.
27.09	Demonstrate an understanding of subjective and objective observations.
27.10	Demonstrate observation and documentation skills of patient's verbal and nonverbal communication, changes in thought processes, mood, and behavior.
27.11	Demonstrate the ability to observe and document physical signs and symptoms of patient responses to medications, drug use or change in condition and change in vital signs.
27.12	Record events accurately and be able to place event in time and sequence
27.13	Perform a verbal report and communicate to nurse or team leader completely, accurately and immediately re: changes in patient condition, vital signs, mood and behavior.
27.14	Demonstrate correct documentation procedures and guidelines in regards to format, proper grammar and spelling, appropriate use of medical abbreviations, medical terminology, and types of charting utilized at different facilities.
28.0	Implement crisis intervention techniques and emergency services if necessary in the mental health setting. — The student will be able to:
28.01	Discuss the Five-Phase Aggression Cycle: triggering phase, escalation phase, crisis phase, recovery phase, and post crisis phase.
28.02	Demonstrate vigilance in identifying behaviors that will initiate in increase in agitation and notify team members if observed.
28.03	Assess suicide or homicide potential plan.



28.04	Access emergency services if necessary.
28.05	Utilize reality- oriented approach, active listening and attend to immediate needs.
28.06	Remain with individual who is experiencing panic anxiety.
28.07	Demonstrate knowledge of de-escalation techniques: calm voice, reduce stimulation, verbal redirect, time out (quiet time-open seclusion) relaxation techniques, distract with positive activity, discuss alternative strategies etc.
28.08	Enforce policies and procedures related to aggressive and destructive behaviors including establishing an understanding of acceptable behaviors with the patient and enforcing rules for unacceptable behaviors.
28.09	Demonstrate knowledge of facility's crisis intervention policy and crisis team to be notified if de-escalation techniques fail, and patient escalates to physical aggression.
28.10	Discuss crisis intervention measures for Inpatient setting including:
28.10.01	“show of force”
28.10.02	locked seclusion
28.10.03	seclusion and restraints
28.10.04	use of prn medications
28.11	Demonstrate knowledge of restraint policy.
28.12	Assist with reintegration of patient to environment when stabilized and is able to participate.
28.13	Demonstrate vigilance in identifying clues of a patient's suicidal intent – both direct and indirect and notify team member in charge.
28.14	Demonstrate knowledge of risk factors for suicide and discuss suicide assessment.
28.15	Recognize self-harm behaviors.
28.16	Discuss methods of suicide.
28.17	Discuss suicide ideation.
28.18	Demonstrate knowledge of notifying nurse/person in charge or emergency services if patient communicates suicide plan or describes means to carry out suicide plan.
28.19	Follow facility procedure for suicidal patient and access emergency services if necessary.
28.20	Supervise the safety of a suicidal inpatient by removing all potentially harmful objects and monitoring them closely during mealtime, medication administration, bathroom use, and activities.
28.21	Demonstrate knowledge of suicide precautions.
28.22	Demonstrate different levels of suicidal precautions as needed including 1:1 contact and constant visual observation, or every 15-minute checks and document.
28.23	Demonstrate knowledge of no harm contract and limitations.

28.24	Encourage client to express honest feelings, including anger.
28.25	Display and communicate that patient has value.
28.26	Perform room searches as necessary.
29.0	Participate as a member of a multidisciplinary team in the planning and implementation of care and treatment for individual patients. -- The student will be able to:
29.01	Relate unit problems and needs to the team leader, or head nurse as appropriate.
29.02	Report violations of patients on unit and assist with issuing consequences.
29.03	Contribute to the formulation of unit goals for individual patient.
29.04	Participate in the planning, decision-making through staff meetings.
29.05	Support hospital and residential policies and procedures as well as the procedure manual for the unit.
29.06	Display understanding of the limitations of the role of the mental health technician.
29.07	Display cooperation when asked to change assignments or tasks.
29.08	Demonstrate ability to function independently without constant supervision.
29.09	Show respect for coworkers and be able to interpret the organizational chart.
29.10	Maintain own proper physical, emotional, and mental health through application of proper body mechanics, use of healthy coping mechanisms, ability to have self- awareness skills and seek healthy support when necessary.
29.11	Promote a healthy interpersonal relationship with peers - show respect and recognition by positive communication.
29.12	Collaborate with other team members in proper application of the nursing process: (assessment, planning, implementation and evaluation).
29.13	Accept direction and constructive criticism without becoming defensive.
29.14	Demonstrate ability to assist and function in various unit capacity: clerical and resident manager roles (i.e. display telephone etiquette, escort patient, order supplies, simple filing & fax, copy machine ability).
30.0	Provide patient education and information on the various resources and support groups available for the mentally ill, substance using or addictive client, and family members. – The student will be able to:
30.01	Demonstrate and discuss knowledge of local support groups, community mental health centers and developmental disabled centers that provide support and assistance to patients and their families.
30.02	Demonstrate and discuss knowledge of 12- step program model for recovery.
30.03	Display knowledge of the various self- help groups and peer assistance programs that can help addicts with recovery and rehabilitation i.e. AA (Alcoholics Anonymous), NA (Narcotics Anonymous), MARA (Medication Assisted Recovery Anonymous), and

	OA (Overeaters Anonymous).
30.04	Demonstrate and discuss knowledge of 12 step self- help groups available for the family members and loved ones of drug addicts and alcoholics i.e. Al-Anon family groups and Nar-Anon family groups.
30.05	Understand the principles of 12-step program, 12 steps and traditions, anonymity, key slogans, and use of sponsor.
30.06	Demonstrate and discuss knowledge regarding national and local organizations and services for mental health and substance use issues such as NAMI, SAMHSA, NIMH, Autism Speaks.org, WRAP (Wellness Recovery Action Plan) for patient and family information.
31.0	Conduct individual, group and family presentations / discussions to facilitate patient recovery and wellness. — The student will be able to:
31.01	Demonstrate thorough knowledge and preparation of content and information for subject matter of educational group discussion/presentation as well as be able to state the goal of the presentation/discussion.
31.02	Display awareness of demographics of group participants (gender, culture, age, socioeconomic etc.); awareness of participant's cognitive and developmental stages, readiness for education on subject and comprehension ability.
31.03	Demonstrate awareness of group dynamics and group process.
31.04	Communicate “ground rules” and expectations of the group.
31.05	Display ability to create and enforce ground rules and appropriate boundaries for group learning and education.
31.06	Demonstrate effective communication techniques (verbal and nonverbal) and use of possible role play, skits, handouts and creative supplements of content to be discussed or presented. (Assure client safety and know possible “triggers”).
31.07	Display ability to effectively “close” the group or presentation.
31.08	Demonstrate knowledge of: attendance record, points allocated for attendance and participation.
31.09	Communicate to counselor or nurse any behaviors or verbalizations of patient that warrant further exploration or immediate attention.
31.10	Demonstrate ability to document patient attendance and observations in accordance to facility procedures and guidelines.
31.11	Complete a post group self- analysis of one's own strengths and weaknesses.
31.12	Assess modifications one would make for future group presentations.
32.0	Perform pharmacological aspects of care as directed (residential and assisted living facility settings). – The student will be able to:
32.01	Demonstrate knowledge of 6 Rights of Medication Administration (right medication, right dose, right patient, right time, right route, and right documentation) and policies.
32.02	Observe and report side effects of medication.
32.03	Supervise and document patient medication administration.
32.04	Encourage client to take prescribed medication. Document refusal.

32.05	Assemble information about properties of medications being administered, their potential side effects.
32.06	Demonstrate knowledge of the client's rights relating to taking or refusing medication.
32.07	Determine client's medication history from records or family in relation to re-allergic reactions.
32.08	Assure adequate supply and safeguard storage of medications to prevent overdose.
32.09	Assume responsibility for information transfer to/from oncoming shift and communicate concerns or changes to nurse or person in charge.

## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

The program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health's education requirements for HIV/AIDS, Domestic Violence and Prevention of Medical Errors. Although not a requirement for initial licensure, it is a requirement for renewal, therefore the instructor may provide a certificate for renewal purposes to the student verifying these requirements have been met.

If students who are successful completers of the Mental Health Technician program can seek further certification through The Florida Certification Board (FCB) for Certified Recovery Peer Specialist: (CRPS -A Adult, CRPS-F Family, CRPS-V Veteran); or Certified Community Health Worker or Certified Behavioral Health Technician, please refer to the FCB for requirements, policies, and procedures. Applicants and certified professionals are individually responsible for ensuring they are following current FCB policy and procedures.

If students in this program are seeking a licensure as a Certified Nursing Assistant (CNA), through The Department of Health, please refer to 456.0635 F.S. for more information on disqualification for the licensure through the Department of Health.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

## **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 9.0, Language 9.0, and Reading 9.0. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Health Science Core Standards and Benchmarks**

**Career Certificate Program and College Level**

The **Health Science Core** is required in the majority of Career Certificate Program and College health science programs. At the Career Certificate Program level, the health science core is offered through Basic Health Care Worker (HSC0003) on page 2 of this document. In college credit programs it is encompassed in standards 1-11 listed on page 8 of this document. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science programs in which it is a part of. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training. A student who completes the applicable competencies at any occupational completion point may either continue with the training program or exit as an occupational completer.

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

**Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.

**Florida Department of Education  
Student Performance Standards**

**Career Certificate Program /ATD**

Program Number	Identified in the program in which the course is associated.
CIP Number	Identified in the program in which the course is associated.
Grade Level	30, 31
Standard Length	90 Clock hours
Teacher Certification	Identified in the program in which the course is associated.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Identified in the program in which the course is associated.

**When offered as a Career Certificate Program or ATD clock hour program, the following course encompasses the health science core:**

<b>Career Certificate Program Course Number: HSC0003</b>	
<b>Occupational Completion Point: A</b>	
<b>Basic Healthcare Worker – 90 Hours – SOC Code 31-9099</b>	
01.0	Demonstrate knowledge of the healthcare delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the healthcare delivery system including public, private, government and non-profit.
01.02	Identify common methods of payment for healthcare services.
01.03	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.
01.04	Describe the composition and functions of a healthcare team.
01.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
01.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.07	Identify characteristics of effective teams.
01.08	Recognize methods for building positive team relationships.



01.09	Analyze attributes and attitudes of an effective leader.
01.10	Recognize factors and situations that may lead to conflict.
01.11	Demonstrate effective techniques for managing team conflict.
01.12	Describe factors that influence the current delivery system of healthcare.
01.13	Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. –The student will be able to:
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.
02.06	Use appropriate medical terminology and abbreviations.
02.07	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.08	Recognize the importance of patient/client educations regarding healthcare.
02.09	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic, and religious groups.
02.10	Analyze elements of communication using a sender-receiver model.
02.11	Distinguish between and report subjective and objective information.
02.12	Report relevant information in order of occurrence.
03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
03.01	Discuss the legal framework of the healthcare occupations including scope of practice legislation.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.

03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the "Patient's Bill of Rights".
03.06	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
03.07	Describe advance directives.
03.08	Describe informed consent.
03.09	Explain the laws governing harassment, labor and employment.
03.10	Differentiate between legal and ethical issues in healthcare.
03.11	Describe a code of ethics consistent with the healthcare occupation.
03.12	Identify and compare personal, professional, and organizational ethics.
03.13	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice.
03.14	Recognize and report illegal and/or unethical practices of healthcare workers.
03.15	Recognize and report abuse including domestic violence and neglect.
03.16	Distinguish among the five schedules of controlled substances.
04.0	Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:
04.01	Describe strategies for prevention of diseases including health screenings and examinations.
04.02	Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.
04.03	Identify psychological reactions to illness including defense mechanisms.
04.04	Identify complementary and alternative health practices.
04.05	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
04.06	Explain the basic concepts of positive self-image, wellness and stress.
04.07	Develop a wellness and stress control plan that can be used in personal and professional life.
04.08	Explore and utilize the U.S. Department of Agriculture's nutrition resources.
04.09	Recognize the steps in the grief process.

05.0	Recognize and practice safety and security procedures. – The student will be able to:
05.01	Recognize safe and unsafe working conditions and report safety hazards.
05.02	Demonstrate the safe use of medical equipment.
05.03	Explain and apply the theory of root- cause analysis.
05.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
05.05	Identify and practice security procedures for medical supplies and equipment.
05.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.
05.07	Recognize Safety Data Sheets and comply with safety signs, symbols, and labels.
05.08	Demonstrate proper body mechanics and ergonomics.
05.09	Demonstrate the procedure for properly identifying patients.
05.10	Demonstrate procedures for the safe transport and transfer of patients.
05.11	Describe fire, safety, disaster and evacuations procedures.
05.12	Discuss The Joint commission patient safety goals and any other applicable accrediting/regulatory agency guidelines.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Record and monitor vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
06.04	Recognize adverse drug related emergencies and take appropriate first aid action.
07.0	Recognize and practice infection control procedures. – The student will be able to:
07.01	Define principles of infection control including standard and transmission based precautions.
07.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
07.03	Demonstrate knowledge of surgical asepsis.

07.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.
08.0	Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:
08.01	Describe technology applications in healthcare.
08.02	Define terms and demonstrate basic computer skills.
08.03	Recognize technology applications in healthcare.
08.04	Interpret information from electronic medical documents.
08.05	Identify methods of communication to access and distribute data such as fax, e-mail, and internet.
09.0	Demonstrate employability skills. – The student will be able to:
09.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
09.02	Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality, and behavior (i.e. telephone etiquette, courtesy and self-introductions).
09.03	Identify documents that may be required when applying for a job.
09.04	Write an appropriate resume.
09.05	Conduct a job search.
09.06	Complete a job application form correctly.
09.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments, and career growth potential.
09.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
09.09	Identify acceptable work habits.
09.10	Recognize appropriate affective/professional behavior.
09.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services and biotechnology research and development).
10.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
10.01	Recognize emerging diseases and disorders.
10.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.

10.03	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
10.04	Identify "at risk" behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
10.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.
10.06	Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.
11.0	Apply basic math and science skills. – The student will be able to:
11.01	Draw, read, and report on graphs, charts, and tables.
11.02	Measure time, temperature, distance, capacity, and mass/weight.
11.03	Make, use and convert using both traditional and metric units.
11.04	Make estimations and approximations and judge the reasonableness of the result.
11.05	Convert from regular to 24 hour time.
11.06	Demonstrate ability to evaluate and draw conclusions.
11.07	Organize and communicate the results obtained by observation and experimentation.
11.08	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
11.09	Calculate ratios.

**Florida Department of Education  
Student Performance Standards**

**AS / CCC / ATD**

CIP Number	Identified in the program in which the course is associated.
Program Type	College Credit
Standard Length	Identified in the program in which the course is associated.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

**When offered as college credit, Standards 1-11 encompasses the health science core:**

01.0	Demonstrate knowledge of the healthcare delivery system and health occupations. – The student will be able to:
01.01	Identify the basic components of the healthcare delivery system including public, private, government and non-profit.
01.02	Identify common methods of payment for healthcare services.
01.03	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.
01.04	Describe the composition and functions of a healthcare team.
01.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
01.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.07	Identify characteristics of effective teams.
01.08	Recognize methods for building positive team relationships.
01.09	Analyze attributes and attitudes of an effective leader.
01.10	Recognize factors and situations that may lead to conflict.
01.11	Demonstrate effective techniques for managing team conflict.
01.12	Describe factors that influence the current delivery system of healthcare.

01.13	Explain the impact of emerging issues including technology, epidemiology, bioethics, and socioeconomics on healthcare delivery systems.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04	Respond to verbal and non-verbal cues.
02.05	Compose written communication using correct spelling, grammar, formatting and confidentiality and specific formats of letter writing.
02.06	Use appropriate medical terminology and abbreviations.
02.07	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.
02.08	Recognize the importance of patient/client educations regarding healthcare.
02.09	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.
02.10	Analyze elements of communication using a sender-receiver model.
02.11	Distinguish between and report subjective and objective information.
02.12	Report relevant information in order of occurrence.
03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:
03.01	Discuss the legal framework of the healthcare occupations including scope of practice legislation.
03.02	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
03.03	Demonstrate procedures for accurate documentation and record keeping.
03.04	Interpret healthcare facility policy and procedures.
03.05	Explain the “Patient’s Bill of Rights”.
03.06	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
03.07	Describe advance directives.

03.08	Describe informed consent.
03.09	Explain the laws governing harassment, labor, and employment.
03.10	Differentiate between legal and ethical issues in healthcare.
03.11	Describe a code of ethics consistent with the healthcare occupation.
03.12	Identify and compare personal, professional, and organizational ethics.
03.13	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice.
03.14	Recognize and report illegal and/or unethical practices of healthcare workers.
03.15	Recognize and report abuse including domestic violence and neglect.
03.16	Distinguish among the five schedules of controlled substances.
04.0	Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:
04.01	Describe strategies for prevention of diseases including health screenings and examinations.
04.02	Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.
04.03	Identify psychological reactions to illness including defense mechanisms.
04.04	Identify complementary and alternative health practices.
04.05	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
04.06	Explain the basic concepts of positive self-image, wellness, and stress.
04.07	Develop a wellness and stress control plan that can be used in personal and professional life.
04.08	Explore and utilize the U.S. Department of Agriculture's nutrition resources.
04.09	Recognize the steps in the grief process.
05.0	Recognize and practice safety and security procedures. – The student will be able to:
05.01	Recognize safe and unsafe working conditions and report safety hazards.
05.02	Demonstrate the safe use of medical equipment.
05.03	Explain and apply the theory of root- cause analysis.



05.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
05.05	Identify and practice security procedures for medical supplies and equipment.
05.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.
05.07	Recognize Safety Data Sheets and comply with safety signs, symbols, and labels.
05.08	Demonstrate proper body mechanics and ergonomics.
05.09	Demonstrate the procedure for properly identifying patients.
05.10	Demonstrate procedures for the safe transport and transfer of patients.
05.11	Describe fire, safety, disaster, and evacuations procedures.
05.12	Discuss The Joint commission patient safety goals and any other applicable accrediting/regulatory agency guidelines.
06.0	Recognize and respond to emergency situations. – The student will be able to:
06.01	Record and monitor vital signs.
06.02	Describe legal parameters relating to the administration of emergency care.
06.03	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
06.04	Recognize adverse drug related emergencies and take appropriate first aid action.
07.0	Recognize and practice infection control procedures. – The student will be able to:
07.01	Define principles of infection control including standard and transmission based precautions.
07.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
07.03	Demonstrate knowledge of surgical asepsis.
07.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.
08.0	Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:
08.01	Describe technology applications in healthcare.
08.02	Define terms and demonstrate basic computer skills.

08.03	Recognize technology applications in healthcare.
08.04	Interpret information from electronic medical documents.
08.05	Identify methods of communication to access and distribute data such as fax, e-mail and internet.
09.0	Demonstrate employability skills. – The student will be able to:
09.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
09.02	Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality, and behavior (i.e. telephone etiquette, courtesy and self-introductions).
09.03	Identify documents that may be required when applying for a job.
09.04	Write an appropriate resume.
09.05	Conduct a job search.
09.06	Complete a job application form correctly.
09.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments, and career growth potential.
09.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
09.09	Identify acceptable work habits.
09.10	Recognize appropriate affective/professional behavior.
09.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services and biotechnology research and development).
10.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
10.01	Recognize emerging diseases and disorders.
10.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.
10.03	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
10.04	Identify "at risk" behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
10.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.
10.06	Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.

11.0	Apply basic math and science skills. – The student will be able to:
11.01	Draw, read, and report on graphs, charts, and tables.
11.02	Measure time, temperature, distance, capacity, and mass/weight.
11.03	Make, use and convert using both traditional and metric units.
11.04	Make estimations and approximations and judge the reasonableness of the result.
11.05	Convert from regular to 24 hour time.
11.06	Demonstrate ability to evaluate and draw conclusions.
11.07	Organize and communicate the results obtained by observation and experimentation.
11.08	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
11.09	Calculate ratios.

Florida Department of Education  
Curriculum Framework

**Health Science Core Standards and Benchmarks**

**Secondary Level**

The **Health Science Core** is the first OCP of the majority of secondary health science programs. The two credit core is required as a prerequisite for all programs except for Practical Nursing and Pharmacy Technician and consists of the courses Health Science Anatomy & Physiology (8417100) and Health Science Foundations (8417110). These courses were previously titled Health Science 1 and Health Science 2. Secondary students completing the two required courses will not have to repeat the core in postsecondary. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training. A student who completes the applicable competencies at any occupational completion point may either continue with the training program or exit as an occupational completer.

**The course Anatomy and Physiology (2000350) or Anatomy and Physiology Honors (2000360) may be substituted for the course Health Science Anatomy & Physiology (8417100).**

**The course Health Science Anatomy & Physiology (8417100) is designated as an equally rigorous (EQ) science credit.**

**Secondary – Career Preparatory**

Program Number	Identified in the program in which the course is associated.
CIP Number	Identified in the program in which the course is associated.
Grade Level	9-12
Standard Length	2 credits
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other

## Program Structure

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary health core course structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8417100	Health Science Anatomy and Physiology	ANY HEALTH OCCUP G *(See DOE approved list)	1 credit	31-9099	3	EQ
8417110	Health Science Foundations		1 credit		3	

*(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)*

**Standards 1-27 encompass the Health Science Core:**

- 01.0 Analyze and interpret an overview of the human body, including organization and chemical process.
- 02.0 Apply correct medical terminology relating to body structure and function within a real-world application.
- 03.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
- 04.0 Analyze the integumentary system in relation to health and disease.
- 05.0 Analyze the skeletal system in relation to health and disease.
- 06.0 Analyze the muscular system in relation to health and disease.
- 07.0 Analyze the nervous system in relation to health and disease.
- 08.0 Analyze the endocrine system in relation to health and disease.
- 09.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
- 10.0 Analyze the lymphatic and immune systems in relation to health and disease.
- 11.0 Analyze the respiratory system in relation to health and disease.
- 12.0 Analyze the digestive system in relation to health and disease.
- 13.0 Analyze the urinary system in relation to health and disease.
- 14.0 Analyze the both the male and female reproductive systems in relation to health and disease.
- 15.0 Identify and explain factors relating to genetics and disease.
- 16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
- 17.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 18.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 19.0 Demonstrate legal and ethical responsibilities.
- 20.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 21.0 Recognize and practice safety and security procedures.
- 22.0 Recognize and respond to emergency situations.
- 23.0 Recognize and practice infection control procedures.
- 24.0 Demonstrate an understanding of information technology applications in healthcare.
- 25.0 Demonstrate employability skills.
- 26.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 27.0 Apply basic math and science skills.

**Florida Department of Education  
Student Performance Standards**

**Course Title:** Health Science Anatomy & Physiology  
**Course Number:** 8417100  
**Course Credit:** 1

**Course Description:**

This course is part of the secondary Health Core consisting of a study of the human body, both structurally and functionally with emphasis on the pathophysiology and transmission of disease. Medical terminology is an integral part of the course.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

**CTE Standards and Benchmarks**

01.0	Analyze and interpret an overview of the human body, including organization and chemical process. – The student will be able to:
01.01	Evaluate interrelationships of the basic structural and functional organization of the human body including chemical, cellular, tissue and organ systems.
01.02	Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules.
01.03	Examine medical implications of body planes, directional terms, cavities, abdominal regions, and quadrants.
01.04	Discuss the chemical processes that maintain life, including homeostasis, cellular respiration, the role of enzymes as catalysts and the basic concepts of metabolism.
02.0	Apply correct medical terminology relating to body structure and function within a real-world application. – The student will be able to:
02.01	Evaluate and apply anatomical terminology to describe location of parts or areas of the body and to describe the relation of one part to another.
02.02	Interpret correct medical terminology including roots, prefixes and suffixes to indicate anatomical structures and function.
02.03	Extend medical terminology to real-world applications.

## CTE Standards and Benchmarks

03.0	Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions. – The student will be able to:
03.01	Discuss and describe cell structure and function in healthy tissue.
03.02	Discuss and describe cell structure and function in diseased tissue including how damage to one tissue may impact the function of another tissue.
03.03	Compare and contrast the four main types of tissue including the interrelationships of tissues.
03.04	Discuss the location and function of tissues as it relates to homeostasis.
04.0	Analyze the integumentary system in relation to health and disease. – The student will be able to:
04.01	Apply medical terminology as related to the integumentary system.
04.02	Discuss and describe the structure and function of the integumentary system across the lifespan.
04.03	Demonstrate knowledge of cells and tissues in the integumentary system.
04.04	Identify and analyze common diseases and disorders of the integumentary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
04.05	Discuss or research health careers related to the integumentary system.
04.06	Demonstrate knowledge of skills related to the integumentary system which may include infection control and hand washing skills.
05.0	Analyze the skeletal system in relation to health and disease. – The student will be able to:
05.01	Apply medical terminology as related to the skeletal system.
05.02	Discuss and describe the structure and function of the skeletal system across the lifespan.
05.03	Identify and explain major bone markings and their implications.
05.04	Identify and explain joints and their implications.
05.05	Discuss the interrelationship between calcium, hormones, and the skeletal system.
05.06	Apply knowledge of cells and tissues in the skeletal system.
05.07	Identify and analyze common diseases and disorders of the skeletal system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
05.08	Discuss or research health careers related to the skeletal system.



## CTE Standards and Benchmarks

05.09 Demonstrate knowledge of skills related to the skeletal system which may include range of motion.

06.0 Analyze the muscular system in relation to health and disease. – The student will be able to:

06.01 Apply medical terminology as related to the muscular system.

06.02 Discuss and describe the structure and function of the muscular system across the lifespan.

06.03 Identify and explain the 3 main types of muscles and their implications.

06.04 Interpret muscle function by examining attachment to bone.

06.05 Discuss the interrelationship between calcium, ions, and the muscular system.

06.06 Apply knowledge of cells and tissues in the muscular system.

06.07 List the steps involved in the sliding filament of muscle contraction.

06.08 Describe signal transmission across a myoneural/neuromuscular junction.

06.09 Identify and analyze common diseases and disorders of the muscular system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

06.10 Discuss or research health careers related to the muscular system.

06.11 Demonstrate knowledge of skills related to the muscular system which may include isometric and isotonic contractions.

07.0 Analyze the nervous system in relation to health and disease. – The student will be able to:

07.01 Apply medical terminology as related to the nervous system.

07.02 Discuss and describe the structure and function of the nervous system across the lifespan.

07.03 Identify and explain the interrelatedness of the Central Nervous System (CNS) and Peripheral Nervous System (PNS).

07.04 Compare and contrast the divisions of the Autonomic Nervous System (ANS).

07.05 Apply knowledge of cells and tissues in the nervous system.

07.06 Explain how neurotransmitters help propagate electrical impulses.

07.07 Describe reflex pathways and their importance.

07.08 Identify and analyze common diseases and disorders of the nervous system including etiology, prevention, pathology, diagnosis

## CTE Standards and Benchmarks

and treatment/rehabilitation.

07.09 Discuss or research health careers related to the nervous system.

07.10 Demonstrate knowledge of skills related to the nervous system which may include recognizing signs and symptoms of a stroke.

08.0 Analyze the endocrine system in relation to health and disease. – The student will be able to:

08.01 Apply medical terminology as related to the endocrine system.

08.02 Discuss and describe the structure and function of the endocrine system across the lifespan.

08.03 Compare and contrast endocrine and exocrine glands.

08.04 Compare and contrast negative and positive feedback loops.

08.05 Evaluate the relationship between the endocrine system and homeostasis in health and disease.

08.06 Apply knowledge of cells and tissues in the endocrine system.

08.07 Identify and analyze common diseases and disorders of the endocrine system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

08.08 Discuss or research health careers related to the endocrine system.

08.09 Demonstrate knowledge of skills related to the endocrine system which may include recognizing the signs and symptoms of low blood sugar.

09.0 Analyze the cardiovascular/circulatory system in relation to health and disease. – The student will be able to:

09.01 Apply medical terminology as related to the cardiovascular system.

09.02 Discuss and describe the structure and function of the cardiovascular system across the lifespan.

09.03 Demonstrate knowledge of major blood vessels.

09.04 Compare and contrast the structure and function of arteries, veins, and capillaries.

09.05 Analyze the interdependence between systemic and pulmonary circulation.

09.06 Design a map or flow chart depicting the normal pathway of blood flow through the heart.

09.07 Design a map or flow chart depicting the normal electrical pathway through the heart.

## CTE Standards and Benchmarks

09.08	Apply knowledge of cells and tissues in the cardiovascular system.
09.09	Demonstrate knowledge of the composition of blood to include formed elements and plasma.
09.10	Evaluate ABO blood types and Rh factor.
09.11	Predict potential blood donors for a transfusion through the analysis of blood types with ABO and/or Rh compatibility.
09.12	Identify and analyze common diseases and disorders of the cardiovascular system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
09.13	Discuss or research health careers related to the cardiovascular system.
09.14	Demonstrate knowledge of skills related to the cardiovascular system which might include assessing pulse.
10.0	Analyze the lymphatic and immune systems in relation to health and disease. – The student will be able to:
10.01	Apply medical terminology as related to the lymphatic and immune systems.
10.02	Discuss and describe the structure and function of the lymphatic and immune systems across the lifespan.
10.03	Validate the importance of the accessory organs (thymus, tonsils, spleen, appendix, Peyer's patch) promoting the effectiveness of the lymphatic and immune system.
10.04	Compare and contrast passive and active immunity.
10.05	Discuss the impact of B cells and T cells on diseases of the immune system.
10.06	Evaluate and discuss the body's defense mechanisms in relation to common communicable diseases.
10.07	Apply knowledge of cells and tissues in the lymphatic and immune systems.
10.08	Identify and analyze common diseases and disorders of the lymphatic and immune system including etiology, prevention, pathology, diagnosis, and treatment/rehabilitation.
10.09	Discuss or research health careers related to the lymphatic and immune systems.
10.10	Demonstrate knowledge of skills related to the lymphatic and immune systems.
11.0	Analyze the respiratory system in relation to health and disease. – The student will be able to:
11.01	Apply medical terminology as related to the respiratory system.
11.02	Discuss and describe the structure and function of the respiratory system across the lifespan.

## CTE Standards and Benchmarks

11.03 Evaluate the interrelatedness of the cardiovascular and respiratory systems.

11.04 Apply knowledge of cells and tissues in the respiratory system.

11.05 Identify and analyze common diseases and disorders of the respiratory system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

11.06 Discuss or research health careers related to the respiratory system.

11.07 Demonstrate knowledge of skills related to the respiratory system which might include monitoring respirations.

12.0 Analyze the digestive system in relation to health and disease. – The student will be able to:

12.01 Apply medical terminology as related to the digestive system.

12.02 Discuss and describe the structure and function of the digestive system across the lifespan.

12.03 Apply knowledge of cells and tissues in the digestive system.

12.04 Identify and analyze common diseases and disorders of the digestive system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

12.05 Discuss or research health careers related to the digestive system.

12.06 Demonstrate knowledge of skills related to the digestive system which might include a nutritional self-assessment.

13.0 Analyze the urinary system in relation to health and disease. – The student will be able to:

13.01 Apply medical terminology as related to the urinary system.

13.02 Discuss and describe the structure and function of the urinary system across the lifespan.

13.03 Justify the interrelatedness of the urinary and cardiovascular system in promoting homeostasis.

13.04 Apply knowledge of cells and tissues in the urinary system.

13.05 Identify and analyze common diseases and disorders of the urinary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

13.06 Discuss or research health careers related to the urinary system.

13.07 Demonstrate knowledge of skills related to the urinary system which may include measuring Intake and Output.

## CTE Standards and Benchmarks

14.0 Analyze the both the male and female reproductive systems in relation to health and disease. – The student will be able to:

14.01 Apply medical terminology as related to the each of the male and female reproductive systems.

14.02 Discuss and describe the structure and function of both reproductive systems across the lifespan.

14.03 Apply knowledge of cells and tissues of both reproductive systems.

14.04 Identify and analyze common diseases and disorders of both reproductive systems including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.

14.05 Discuss or research health careers related to both reproductive systems.

14.06 Demonstrate knowledge of skills related to the reproductive system which may include measuring fetal development and relating it to possible complications.

15.0 Identify and explain factors relating to genetics and disease. – The student will be able to:

15.01 Analyze DNA and its role in human heredity.

15.02 Describe the role of human genetics in relation to genetic diseases.

15.03 Discuss or research current issues related to genetic research.

15.04 Explore the relationship between mutation, cell cycle and uncontrolled cell growth that can result in cancer.

15.05 Explore how environmental factors contribute to an individual's overall wellness and quality of life.

16.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios. – The student will be able to:

16.01 Discuss and explain the direct and indirect transmission of disease.

16.02 Discuss and apply the principles of the chain of infection to real-world scenarios.

16.03 Categorize the common microorganisms affecting the human body.

16.04 Identify and analyze common diseases caused by microorganisms.

Florida Department of Education  
Student Performance Standards

**Course Title:** Health Science Foundations  
**Course Number:** 8417110  
**Course Credit:** 1

**Course Description:**

This course is part of the Secondary Health Core designed to provide the student with an in depth knowledge of the health care system and associated occupations. Emphasis is placed on communication and interpersonal skills, use of technology, ethics and the development of critical thinking and problem solving skills. Students will also learn first aid skills and demonstrate the measurement of vital signs. Students may shadow professionals throughout the course.

<b>CTE Standards and Benchmarks</b>	
17.0	Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:
17.01	Identify the basic components of the health care delivery system including public, private, government and non-profit.
17.02	Identify common methods of payment for healthcare services.
17.03	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.
17.04	Describe the composition and functions of a healthcare team.
17.05	Identify the general roles and responsibilities of the individual members of the healthcare team.
17.06	Identify the roles and responsibilities of the consumer within the healthcare delivery system.
17.07	Identify characteristics of effective teams.
17.08	Recognize methods for building positive team relationships.
17.09	Analyze attributes and attitudes of an effective leader.
17.10	Recognize factors and situations that may lead to conflict.
17.11	Demonstrate effective techniques for managing team conflict.
17.12	Describe factors that influence the current delivery system of healthcare.
17.13	Explain the impact of emerging issues including technology, epidemiology, bioethics, and socioeconomics on healthcare delivery systems.

## CTE Standards and Benchmarks

18.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:

18.01 Develop basic speaking and active listening skills.

18.02 Develop basic observational skills and related documentation strategies in written and oral form.

18.03 Identify characteristics of successful and unsuccessful communication including communication styles and barriers.

18.04 Respond to verbal and non-verbal cues.

18.05 Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.

18.06 Use appropriate medical terminology and abbreviations.

18.07 Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.

18.08 Recognize the importance of patient/client education regarding healthcare.

18.09 Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.

18.10 Analyze elements of communication using a sender-receiver model.

18.11 Distinguish between and report subjective and objective information.

18.12 Report relevant information in order of occurrence.

19.0 Demonstrate legal and ethical responsibilities. – The student will be able to:

19.01 Discuss the legal framework of the healthcare occupations including scope of practice legislation.

19.02 Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment, and fraud.

19.03 Demonstrate procedures for accurate documentation and record keeping.

19.04 Interpret healthcare facility policy and procedures.

19.05 Explain the "Patient's Bill of Rights".

19.06 Identify standards of the Health insurance Portability and Accountability Act (HIPAA).

19.07 Describe advance directives.

19.08 Describe informed consent.

19.09 Explain the laws governing harassment, labor and employment.

## CTE Standards and Benchmarks

19.10	Differentiate between legal and ethical issues in healthcare.
19.11	Describe a code of ethics consistent with the healthcare occupation.
19.12	Identify and compare personal, professional, and organizational ethics.
19.13	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice.
19.14	Recognize and report illegal and/or unethical practices of healthcare workers.
19.15	Recognize and report abuse including domestic violence and neglect.
19.16	Distinguish among the five schedules of controlled substances.
20.0	Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:
20.01	Describe strategies for prevention of diseases including health screenings and examinations.
20.02	Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.
20.03	Identify psychological reactions to illness including defense mechanisms.
20.04	Identify complementary and alternative health practices.
20.05	Discuss the adverse effects of the use of alcohol, tobacco, and both legal and illegal drugs on the human body and apply safety practices related to these and other high risk behaviors.
20.06	Explain the basic concepts of positive self-image, wellness and stress.
20.07	Develop a wellness and stress control plan that can be used in personal and professional life.
20.08	Explore and utilize the U.S. Department of Agriculture’s nutrition resources.
20.09	Recognize the steps in the grief process.
21.0	Recognize and practice safety and security procedures. – The student will be able to:
21.01	Recognize safe and unsafe working conditions and report safety hazards.
21.02	Demonstrate the safe use of medical equipment.
21.03	Explain and apply the theory of root- cause analysis.
21.04	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.



## CTE Standards and Benchmarks

21.05	Identify and practice security procedures for medical supplies and equipment.
21.06	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.
21.07	Recognize Safety Data Sheets and comply with safety signs, symbols, and labels.
21.08	Demonstrate proper body mechanics and ergonomics.
21.09	Demonstrate the procedure for properly identifying patients.
21.10	Demonstrate procedures for the safe transport and transfer of patients.
21.11	Describe fire, safety, disaster and evacuations procedures.
21.12	Discuss The Joint commission patient safety goals and any other applicable accrediting/regulatory agency guidelines.
22.0	Recognize and respond to emergency situations. – The student will be able to:
22.01	Record and monitor vital signs.
22.02	Describe legal parameters relating to the administration of emergency care.
22.03	Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO), and first aid.
22.04	Recognize adverse drug related emergencies and take appropriate first aid action.
23.0	Recognize and practice infection control procedures. – The student will be able to:
23.01	Define principles of infection control including standard and transmission based precautions.
23.02	Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.
23.03	Demonstrate knowledge of surgical asepsis.
23.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.
24.0	Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:
24.01	Describe technology applications in healthcare.
24.02	Define terms and demonstrate basic computer skills.
24.03	Recognize technology applications in healthcare.

## CTE Standards and Benchmarks

24.04	Interpret information from electronic medical documents.
24.05	Identify methods of communication to access and distribute data such as fax, e-mail, and internet.
25.0	Demonstrate employability skills. – The student will be able to:
25.01	Identify personal traits or attitudes desirable in a member of the healthcare team.
25.02	Exemplify basic professional standards of healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy, and self-introductions).
25.03	Identify documents that may be required when applying for a job.
25.04	Write an appropriate resume.
25.05	Conduct a job search.
25.06	Complete a job application form correctly.
25.07	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments, and career growth potential.
25.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential.
25.09	Identify acceptable work habits.
25.10	Recognize appropriate affective/professional behavior.
25.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services and biotechnology research and development).
26.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:
26.01	Recognize emerging diseases and disorders.
26.02	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.
26.03	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
26.04	Identify "at risk" behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
26.05	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.

## CTE Standards and Benchmarks

26.06 Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.

27.0 Apply basic math and science skills. – The student will be able to:

27.01 Draw, read, and report on graphs, charts and tables.

27.02 Measure time, temperature, distance, capacity, and mass/weight.

27.03 Make, use and convert using both traditional and metric units.

27.04 Make estimations and approximations and judge the reasonableness of the result.

27.05 Convert from regular to 24 hour time.

27.06 Demonstrate ability to evaluate and draw conclusions.

27.07 Organize and communicate the results obtained by observation and experimentation.

27.08 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.

27.09 Calculate ratios.

## Academic Alignment

Secondary Career and Technical Education courses are pending alignment to the B.E.S.T. (Benchmarks for Excellent Student Thinking) Standards for English Language Arts (ELA) and Mathematics that were adopted by the State Board of Education in February 2020. Academic alignment is an

ongoing, collaborative effort of professional educators that provide clear expectations for progression year-to-year through course alignment. This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses.

**Florida Standards for English Language Development (ELD)**

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills.

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Florida Department of Education  
Curriculum Framework

**Program Title:** Firefighter/ Emergency Medical Technician- Combined  
**Program Type:** Career Preparatory  
**Career Cluster:** Law, Public Safety, & Security/ Health Science

**Career Certificate Program**

Program Number	P430217
CIP Number	0743020313
Grade Level	30, 31
Standard Length	792 Hours
Teacher Certification: OCPs A&B	Refer to the <b><u>Program Structure</u></b> section.
Teacher Certification: OCPs C & D	Refer to the <b><u>Program Structure</u></b> section.
CTSO	FPSA and HOSA
SOC Codes (all applicable)	33-2011 Firefighter 29-2041 Emergency Medical Technicians and Paramedics 31-9099 Healthcare Support Workers, All Other
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

# These certifications can only be used for adjunct faculty. Please refer to 64J-1.201 F.A.C. for the EMS instructor qualifications.

## Purpose

The purpose of this program is to provide the necessary training required for students to become certified firefighters as well as licensed Emergency Medical Technicians. It is not intended for those who are currently certified/licensed as either firefighters or EMTs. Students wishing to add an additional certification to an existing credential must enroll in either the Firefighter program or the Emergency Medical Technician program.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Law, Public Safety and Security and Health Science career clusters; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills.

## Program Structure

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S. **(NOTE: Bureau of Fire Standards and Training (BFST) course number system on their frameworks is not the same as SCNS. Ensure to report the FDOE SCNS Course Number.)**

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	FFP0030	Firefighter I	FIRE FIGHT 7G	191 hours	33-2011
B	FFP0031	Firefighter II		301 hours	
C	EMS0110	Emergency Medical Technician	PARAMEDIC @7 7G # EMT 7G # REG NURSE 7 G # PRAC NURSE @7 %7%G *(Must be a Registered Nurse)	300 hours	29-2041

## Regulated Programs

### Firefighter Regulation

Pursuant to 633.128, Florida Statutes, the Department of Financial Service, Division of State Fire Marshal, has established training requirements for firefighters and volunteer firefighters. These requirements are implemented by Rule 69A-37.055, Florida Administrative Code. This program is a planned sequence of instruction consisting of two occupational completion points. **(NOTE: The curriculum frameworks are subject to change by the Bureau of Fire Standards and Training (BFST) in accordance with statutory or Florida Administrative Code (F.A.C.) rule changes.)**

### EMT Regulation

The EMT component of this combined program prepares students for certification as EMT's in accordance with Chapter 64J of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation (DOT), National EMS Education Standards for EMT. This is the initial level for a career in emergency medical services and the primary prerequisite for paramedic training and certification.

The EMT component of this program meets the Department of Health trauma score card methodologies and Sudden Unexpected Infant Death Syndrome training education requirements. Upon completion of this component, the instructor will provide a certificate to the student verifying that these requirements have been met. Programs may also teach domestic violence and prevention of medical errors education and may choose to provide a certificate to the student verifying that this education has been completed.

Please refer to chapter 401 F.S. for more information on disqualification for the EMT license through the Office of Emergency Medical Services, Department of Health.

The EMT component of this program must be taught by an instructor meeting the qualifications as set forth in 64J-1.0201 FAC.

An American Heart Association or Red Cross certification or equivalent in "professional" Basic Life Support is required of all candidates for entrance into the EMT component of this program.

The Student Performance Standards for Emergency Medical Technician were adapted from the US Department of Transportation (DOT) National EMS Educational Standards for EMT.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6. Hospital activity shall include a minimum of 20 hours of supervised clinical supervision, including 10 hours in a hospital emergency department. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

Field internship shall include a competency based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include a minimum of 5 emergency runs resulting in patient care and transport appropriate for the EMT. In addition, the patient care component should include minimum competencies in patient assessment, airway management and ventilation, trauma and medical emergencies.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.



## Standards

### Firefighter Component

The **Bureau of Fire Standards and Training (BFST)** approved curricula is available online.

### Emergency Medical Technician Component

- 01.0 Demonstrate a simple depth, foundational breadth of knowledge of EMS systems.
- 02.0 Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making.
- 03.0 Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness.
- 04.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing.
- 05.0 Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication.
- 06.0 Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication.
- 07.0 Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics.
- 08.0 Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS.
- 09.0 Demonstrate a fundamental knowledge in the use of medical terminology.
- 10.0 Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation.
- 11.0 Demonstrate a fundamental knowledge of life span development to patient assessment and management.
- 12.0 Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care.
- 13.0 Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency.
- 14.0 Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT.
- 15.0 Demonstrate a foundational depth, fundamental breadth of knowledge of airway management across the life span within the scope of practice of the EMT.
- 16.0 Demonstrate a fundamental depth, foundational breadth of knowledge of respiration.
- 17.0 Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span.
- 18.0 Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations.
- 19.0 Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations.
- 20.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking.
- 21.0 Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment.
- 22.0 Demonstrate a simple depth, simple breath of knowledge of monitoring devices within the scope of practice of the EMT.
- 23.0 Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations.
- 24.0 Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints.
- 25.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span.
- 26.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span.

- 27.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span.
- 28.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span.
- 29.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span.
- 30.0 Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span.
- 31.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span.
- 32.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span.
- 33.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span.
- 34.0 Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span.
- 35.0 Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/ renal emergencies across the life span.
- 36.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span.
- 37.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span.
- 38.0 Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span.
- 39.0 Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span.
- 40.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of the trauma patient across the life span.
- 41.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span.
- 42.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of chest trauma across the life span.
- 43.0 Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment, and management of abdominal and genitourinary trauma across the life span.
- 44.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span.
- 45.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span.

- 46.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck, and spine trauma across the life span.
- 47.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span.
- 48.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of trauma patients with special considerations across the life span.
- 49.0 Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of environmental emergencies across the life span.
- 50.0 Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span.
- 51.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT.
- 52.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT.
- 53.0 Demonstrate a fundamental depth, fundamental breath of knowledge of the management of the pediatric patient within the scope of practice of the EMT.
- 54.0 Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT.
- 55.0 Demonstrate a simple depth, simple breadth of knowledge of management of the patient with special challenges across the life span.
- 56.0 Demonstrate a simple depth, foundational breadth of knowledge of risks and responsibilities of transport.
- 57.0 Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system.
- 58.0 Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident.
- 59.0 Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response.
- 60.0 Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools.
- 61.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.
- 62.0 Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster.

Florida Department of Education  
Student Performance Standards

Program Title: Firefighter/ Emergency Medical Technician - Combined  
Career Certificate Program Number: P430217

**Course Number: FFP0030**  
**Occupational Completion Point: A**  
**Firefighter I – 191 Hours – SOC Code 33-2011**

The Bureau of Fire Standards and Training (BFST) approved curricula is available online.

**Course Number: FFP0031**  
**Occupational Completion Point: B**  
**Firefighter II – 301 Hours – SOC Code 33-2011**

**Course Number: EMS0110**  
**Occupational Completion Point: C**  
**Emergency Medical Technician – 300 Hours – SOC Code 29-2041**

01.0	<b>EMS Systems:</b> Demonstrate a simple depth, foundational breadth of knowledge of EMS systems. – The student will be able to:
01.01	Define Emergency Medical Services (EMS) systems.
01.02	Discuss the historical background of the development of the EMS system.
01.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT and PM) as well as the three levels (EMR, EMT, and PM) in the State of Florida.
01.04	Discuss the specific statutes and regulations regarding the EMS system in Florida.
01.05	Discuss vehicle and equipment readiness.
01.06	Characterize the EMS system’s role in prevention and public education.
01.07	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
01.08	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.
01.09	Discuss the maintenance of and differences between certification and licensure for the EMS professional in the State of Florida and NREMT.

01.10	Define quality improvement and discuss the EMT's role in the process.
01.11	Identify the basics of common methods of payment for healthcare services.
01.12	Analyze attributes and attitudes of an effective leader.
01.13	Demonstrate effective techniques for managing team conflict.
01.14	Describe factors that influence the current delivery system of healthcare.
01.15	Discuss the importance of continuing medical education and skills retention.
01.16	Assess personal attitudes and demeanor that may distract from professionalism.
01.17	Serve as a role model and exhibit professional behaviors in the following areas:
01.17.01	integrity
01.17.02	empathy
01.17.03	self-motivation
01.17.04	appearance and personal hygiene
01.17.05	self-confidence
01.17.06	communications (including phone, email and social media etiquette)
01.17.07	time management
01.17.08	teamwork and diplomacy
01.17.09	respect
01.17.10	patient advocacy (inclusive of those with special needs, alternate life styles and cultural diversity)
01.17.11	careful delivery of service
02.0	<b>Research:</b> Demonstrate a simple depth, simple breadth of knowledge of research and evidence-based decision making. – The student will be able to:
02.01	Discuss EMS research and evidence based decision making
02.01.01	Conduct scientific literature searches
02.01.02	Read, interpret, and extract information from journal articles relevant to a project
02.02	Explain the importance of assessing and treating patients based on evidence based decision-making.
02.03	Interpret graphs, charts, and tables.
02.04	Measure time, temperature, distance, capacity, and mass/weight.
02.05	Convert and use traditional and metric units.
02.06	Make estimations, approximations and judge the reasonableness of the result.
02.07	Convert time from a 12 hour format to a 24 hour format
02.08	Demonstrate ability to evaluate and draw conclusions.

02.09	Calculate ratios.
02.10	Explain the rationale for the ems system gathering data.
03.0	<b>Workforce Safety and Wellness:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of workforce safety and wellness. – The student will be able to:
03.01	Explain the need to determine scene safety.
03.02	Discuss the importance of body substance isolation (BSI).
03.03	Describe the steps and equipment the EMT should take for personal protection from airborne and blood borne pathogens and communicable disease.
03.04	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
03.05	Discuss the steps the EMT should take when approaching a family confronted with death and dying.
03.06	Recognize the warning signs of personal stress and discuss the strategies and resources available for EMTs to utilize.
03.07	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
03.08	Discuss the guidelines and safety precautions to be followed when lifting and moving patients and equipment.
03.09	Discuss patient positioning in common emergency situations.
03.10	Discuss situation that may require the use of medical restraints on the patient and explain guidelines and safety consideration for their use.
03.11	Define “infectious disease” and “communicable disease.”
03.12	Describe the routes of transmission and associated risks for infectious disease.
03.13	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis and HIV.
03.14	Explain how immunity to infectious diseases is acquired.
03.15	Explain post exposure management of exposure to patient blood or body fluids, including proper notification documentation.
03.16	Describe the components of physical fitness and mental wellbeing.
03.17	Identify personal health practices and environmental factors, which affect physical, mental, and emotional wellbeing.
03.18	Discuss complementary and alternative health practices.
03.19	Explain the basic concepts of positive self-image, wellness and stress.
03.20	Discuss the need for a wellness and stress control plan that can be used in personal and professional life.

03.21	Explore the importance of adequate nutrition (i.e. U.S. Department of Agriculture's MyPlate food guide ( <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> )).
03.22	Demonstrate safe behaviors in the proper use of medical equipment.
03.23	Explain the theory of root- cause analysis.
03.24	Identify and describe methods in medical error reduction and prevention in the various healthcare settings.
03.25	Identify and practice security procedures for medical supplies and equipment in the various healthcare settings.
03.26	Describe fire, safety, disaster and evacuation procedures in the various healthcare settings.
03.27	Discuss applicable accrediting and regulatory agency patient safety guidelines.
04.0	<b>Documentation:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the principles of medical documentation and report writing. – The student will be able to:
04.01	Discuss applications of technology in healthcare.
04.02	Demonstrate basic computer skills.
04.03	Interpret and utilize information from electronic health records.
04.04	Identify methods of electronic communication to access and distribute data.
04.05	Describe the use and importance of properly written communication and patient care documentation.
04.06	Explain the legal implication of the patient care report.
04.07	Identify the minimum dataset reference patient information and administrative information on the patient care report.
04.08	Understand how to document refusal of care, including legal implications.
04.09	Discuss the implications of the Health Insurance Portability and Accountability Act of 1996 on confidential documentation.
04.10	Describe the special considerations concerning mass casualty incident documentation.
04.11	Demonstrate completion of a patient care report for a medical and trauma patient.
05.0	<b>EMS System Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the EMS communication system, communication with other health care professionals, and team communication. – The student will be able to:
05.01	Understand the basic principles of the various types of communications equipment used in EMS.
05.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.
05.03	Explain the rationale for providing efficient and effective radio communications and patient reports.

05.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
05.05	Perform an organized and concise radio transmission.
05.06	Perform an organized, concise verbal patient report that would be given to the staff at a receiving facility.
05.07	Perform a brief, organized verbal report that would be given during transfer of care at an incident scene.
06.0	<b>Therapeutic Communication:</b> Demonstrate a simple depth, simple breadth of knowledge of the principles of therapeutic communication. – The student will be able to:
06.01	Describe principles of therapeutic and effective communication with patients.
06.02	Discuss basic speaking and active listening skills.
06.03	Recognize the importance of patient/client educations regarding healthcare.
06.04	Discuss the adjustment of communication strategies to effectively communicate with patients with:
06.04.01	differing age groups
06.04.02	differing developmental stages
06.04.03	special needs
06.04.04	Differing cultures, including language barriers
06.05	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
06.06	Discuss the strategies for interviewing persons in special situations.
06.07	Distinguish between and respond to verbal and non-verbal cues.
06.08	Analyze elements of communication using a sender-receiver/close loop model.
06.09	Exhibit positive non-verbal behaviors.
06.10	Establish proper patient rapport.
07.0	<b>Medical/Legal and Ethics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of medical legality and ethics. – The student will be able to:
07.01	Discuss the rational, importance, and limitations of patient autonomy.
07.02	Differentiate between expressed, implied and involuntary consent.
07.03	Discuss the methods of obtaining consent and procedures for minors.
07.04	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
07.05	Discuss the implications for the EMT in patient refusal of care and/or transport.
07.06	Explain the importance, necessity and legality of patient confidentiality.



07.07	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
07.08	Discuss State of Florida and Federal special reporting situations including: 07.08.01 abuse 07.08.02 sexual assault 07.08.03 gunshot and knife wounds 07.08.04 communicable disease 07.08.05 animal Bites
07.09	Differentiate between civil tort and criminal actions.
07.10	Discuss the elements of negligence and defenses/protections from liability.
07.11	Discuss the role of the EMT at crime scenes and preservation of evidence.
07.12	Define ethics and morality and discuss their implication for the EMT.
07.13	Discuss Florida legislation such as: 07.13.01 Baker Act (FS 394.451) 07.13.02 Marchman Act (FS 397.601 and FS 397.675) 07.13.03 Emergency Examination and Treatment of Incapacitated Persons Act (FS 401.445)
07.14	Differentiate between the scope of practice and the standard of care as applied to the EMT.
07.15	Discuss the legal concepts and limitations of immunity, including Good Samaritan statutes and governmental immunity.
07.16	Describe the appropriate patient management and care techniques in a refusal of care situation.
07.17	Analyze the relationship between the law, morals and ethics in EMS and the premise that should under lie the EMTs ethical decisions.
07.18	Describe the criteria necessary to honor an advance directive.
07.19	Explain the rationale for the needs, benefits and varying degrees of advance directives.
08.0	<b>Anatomy and Physiology:</b> Demonstrate a fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. – The student will be able to:
08.01	Identify the following topographic terms: 08.01.01 medial 08.01.02 lateral 08.01.03 proximal 08.01.04 distal 08.01.05 superior 08.01.06 inferior 08.01.07 anterior 08.01.08 posterior 08.01.09 midline

08.01.10	right and left
08.01.11	mid-clavicular
08.01.12	bilateral
08.01.13	mid-axillary
08.02	Describe the life support chain, aerobic metabolism, and anaerobic metabolism.
08.03	Define anatomy, physiology, pathophysiology, and homeostasis.
08.04	Identify and describe the anatomical structures and functions of the following:
08.04.01	skeletal system
08.04.02	muscular system
08.04.03	respiratory System
08.04.04	circulatory/ Cardiovascular system
08.04.05	nervous System
08.04.06	integumentary system
08.04.07	digestive system
08.04.08	endocrine system
08.04.09	renal system
08.04.10	reproductive system
08.04.11	lymphatic System
08.05	Explain cellular anatomy and physiology.
08.06	Explain cellular respiration.
08.07	Discuss cell division.
08.08	Describe the different types of muscle tissues including skeletal, smooth and cardiac.
08.09	Name and identify the location of the bones of the axial and appendicular skeleton.
08.10	Describe the classification and types of joints.
08.11	Discuss the mechanisms of breathing including:
08.11.01	mechanical ventilation
08.11.02	pulmonary volumes
08.11.03	dead space
08.11.04	lung compliance
08.12	Explain the diffusion of gases in external and internal respiration.
08.13	Describe oxygen and carbon dioxide transport in the blood.
08.14	Describe nervous and chemical mechanisms that regulate respirations.
08.15	Discuss respiration and acid-base balance.

08.16	Discuss the hemodynamics of blood pressure.
08.17	Discuss the role of nutrition, metabolism and body temperature on body function.
08.18	Describe the causes, advantages and disadvantages of a fever.
08.19	Discuss the hypothalamus functions as the thermostat in the body.
<b>09.0</b>	<b>Medical Terminology:</b> Demonstrate a fundamental knowledge in the use of medical terminology. – The student will be able to:
09.01	Identify medical terminology word parts such as:
09.01.01	root words
09.01.02	prefixes
09.01.03	suffixes
09.01.04	combining forms
09.02	Correctly utilize medical terminology describing each of the following:
09.02.01	body structures
09.02.02	functions
09.02.03	conditions and disorders
09.02.04	body regions
09.02.05	cavities
09.02.06	areas
09.02.07	landmarks
09.03	Correctly use medical abbreviations and symbols.
09.04	Read and understand basic medical documentation in medical records and medical reports.
09.05	Communicate with healthcare professionals utilizing basic medical terminology.
09.06	Explain the rationale for using accepted medical terminology correctly.
<b>10.0</b>	<b>Pathophysiology:</b> Demonstrate a fundamental knowledge of the causes and pathophysiology of shock and the components of resuscitation. – The student will be able to:
10.01	Discuss signs of irreversible death.
10.02	Review the anatomy and physiology of the respiratory and cardiovascular systems.
10.03	Discuss and identify the pathophysiology of respiratory failure and respiratory and cardiac arrest.
10.04	Understand shock, including the pathophysiology, causes, and the signs and symptoms associated with the various types of shock.
10.05	Discuss the variations in the pathophysiology of shock across the life span.
<b>11.0</b>	<b>Life Span Development:</b> Demonstrate a fundamental knowledge of life span development to patient assessment and management. – The student will be able to:

11.01	Describe the major physiologic and psychosocial characteristics across the life span.
12.0	<b>Public Health:</b> Demonstrate a simple knowledge of the principles of illness and injury prevention in emergency care. – The student will be able to:
12.01	Define public health and explain the goal of the public health field.
12.02	Identify the EMS role within the public health field.
12.03	Discuss basic concepts of epidemiology.
12.04	Discuss ways of EMS involvement in injury prevention.
12.05	Identify areas of need for prevention programs in the community.
13.0	<b>Principles of Pharmacology:</b> Demonstrate a simple depth, simple breadth of knowledge of pharmacology, medication safety, and medication types used during an emergency. –The student will be able to:
13.01	Explain the “rights” of medication administration and describe how each one related to EMS.
13.02	Discuss and differentiate the various medication forms and the appropriate routes of administration
13.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
13.04	Discuss the components and elements of a drug profile including:
13.04.01	class
13.04.02	actions
13.04.03	contraindications
13.04.04	side effects
13.04.05	dose
13.04.06	route
13.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
14.0	<b>Emergency Medications:</b> Demonstrate a fundamental depth, simple breadth of knowledge of emergency medications within the scope of practice of the EMT. – The student will be able to:
14.01	State the following for each medication that can be administered by an EMT as dictated by the State of Florida and local medical direction:
14.01.01	class
14.01.02	generic and trade names
14.01.03	actions
14.01.04	indication
14.01.05	contraindications
14.01.06	complications
14.01.07	routes of administration
14.01.08	side effects
14.01.09	interactions

14.01.10	Doses of medications
14.02	Discuss the forms in which the medications may be found.
14.03	Demonstrate the steps in properly inspecting each type of medication.
14.04	Discuss the difference between administration versus assistance of patient medications.
15.0	<b>Airway Management:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of airway management across the life span within the scope of practice of the EMT. – The student will be able to:
15.01	Review the structures and functions of the respiratory system.
15.02	Describe appropriate airway management for a patient with or without adequate breathing.
15.03	Describe indications for and demonstrate the steps in performing the head-tilt chin-lift and jaw thrust in all age groups.
15.04	Define, identify and describe the following:
15.04.01	tracheostomy
15.04.02	laryngectomy
15.04.03	stoma
15.04.04	tracheostomy tube
15.05	Describe the special considerations in airway management for the pediatric patient.
15.06	Demonstrate the techniques of suctioning.
15.07	Demonstrate relief of FBAO.
15.08	Demonstrate how to insert an oral and nasal -airway adjunct.
15.09	Demonstrate how to insert both esophageal and supra-glottic airways.
16.0	<b>Respirations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of respiration. – The student will be able to:
16.01	Review the pulmonary ventilation process to include mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.).
16.02	Describe the oxygenation process.
16.03	Explain both external and internal respiration process.
16.04	Discuss the various pathophysiologies of the respiratory system.
16.05	Describe assessment and management for adequate and inadequate respiration, including the use of pulse oximetry and capnography.
16.06	Describe the following regarding supplemental oxygen delivery devices:
16.06.01	indications
16.06.02	contraindications

16.06.03	advantages
16.06.04	disadvantages
16.06.05	complications
16.06.06	liter flow range
16.06.07	concentration of delivered oxygen
16.06.08	procedures
16.06.09	purpose
16.06.10	components
16.07	Review the anatomy and physiology of the respiratory system including:
16.07.01	control of respirations
16.07.02	mechanics of respiration
16.07.03	pulmonary ventilation
16.07.04	oxygenation
16.07.05	mechanical ventilation
16.08	Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.
16.09	Demonstrate the correct operation of oxygen tanks and regulators.
16.10	Demonstrate the use of high, medium, low, and variable concentration oxygen delivery devices for all age groups.
16.11	Discuss the use of an oxygen humidifier and the requirements needed for its use.
16.12	Discuss the differences between negative pressure and positive pressure ventilation.
17.0	<b>Artificial Ventilations:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of assessment and management utilizing ventilation across the life span. – The student will be able to:
17.01	Demonstrate how to ventilate a patient with a pocket mask.
17.02	Demonstrate the safe and effective ventilation for a patient with a BVM for one or two rescuers using oral-nasal adjuncts with appropriate airway positioning.
17.03	Discuss the signs of adequate and inadequate ventilation using the BVM.
17.04	Describe the steps involved in performing a comprehensive assessment of ventilations.
17.05	Demonstrate how to ventilate a patient with a stoma.
17.06	Demonstrate the use of various devices used in the assessment of supra-glottic airway placement.
17.07	Describe the following for a patient with an automatic transport ventilator (ATV):
17.07.01	indications
17.07.02	contraindications
17.07.03	advantages
17.07.04	disadvantages
17.07.05	complications

17.07.06	technique for ventilating
17.08	Describe the following for a patient with a CPAP:
17.08.01	indications
17.08.02	contraindications
17.08.03	advantages
17.08.04	disadvantages
17.08.05	complications
17.08.06	technique for ventilating
18.0	<b>Scene Size-Up:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of scene management and multiple patient situations. – The student will be able to:
18.01	Recognize and describe hazards/potential hazards at the scene.
18.02	Discuss common mechanisms of injury/nature of illness.
18.03	Discuss the priority considerations for multiple-patient situations.
18.04	Explain why it is important for the EMT to anticipate and determine the need for additional or specialized resources.
18.05	Discuss the importance of continuous scene assessment to ensure safety of the EMS team and the patient.
18.06	Discuss the minimum standard precautions that should be followed and PPE that should be worn as appropriate.
18.07	Discuss special considerations for dealing with a violent scene.
18.08	Explain the rationale for crew members to evaluate scene safety prior to entering.
18.09	Explain how patient situations affect your evaluation of mechanism of injury or illness.
19.0	<b>Primary Assessment:</b> Demonstrate a fundamental depth, simple breadth of knowledge of the primary assessment for all patient situations. – The student will be able to:
19.01	Summarize the elements of a general impression of the patient.
19.02	Explain the reason for performing a primary assessment.
19.03	Discuss and demonstrate methods of assessing level of responsiveness using AVPU.
19.04	Discuss and demonstrate methods of assessing the airway and providing airway care across the life span.
19.05	Describe and demonstrate methods used for assessing if a patient is breathing across the life span.
19.06	Differentiate between a patient with adequate and inadequate breathing.
19.07	Describe and demonstrate the methods used to obtain a pulse across the life span.
19.08	Discuss and demonstrate assessing the patient for external bleeding.

19.09	Describe and demonstrate the assessment and interpretation of skin color, temperature, moisture and capillary refill across the life span.
19.10	Explain the reasons prioritizing a patient for care and transport.
19.11	Describe when it is appropriate to expose the patient completely.
19.12	Differentiate between critical life-threatening, potentially life-threatening, and non-life-threatening patient presentations.
20.0	<b>History-Taking:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the components of history taking. – The student will be able to:
20.01	Determine and investigate the chief complaint.
20.02	Describe components of the patient history.
20.03	Explain the importance of obtaining a SAMPLE and OPQRST history.
20.04	Acknowledge the feelings patients experience during assessment.
20.05	Discuss the value of obtaining a family and social history.
20.06	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
21.0	<b>Secondary Assessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of techniques used for a secondary assessment. – The student will be able to:
21.01	Discuss the components and techniques of the physical exam and skills involved.
21.02	Discuss the indications for performing:
21.02.01	rapid assessment
21.02.02	focused exam
21.02.03	head to toe exam
21.03	Demonstrate:
21.03.01	rapid exam
21.03.02	focused exam
21.03.03	head to toe exam
21.04	Describe and demonstrate the techniques of inspection, palpation, percussion, and auscultation.
21.05	Describe and demonstrate the importance of obtaining a baseline set of vital signs.
21.06	Discuss blood pressure ranges across the life span.
22.0	<b>Monitoring Devices:</b> Demonstrate a simple depth, simple breadth of knowledge of monitoring devices within the scope of practice of the EMT. – The student will be able to:
22.01	Describe and demonstrate the purpose, indications, procedure, normal findings, and limitations of the following patient monitoring technologies.
22.01.01	pulse oximetry



	22.01.02	glucometry
	22.01.03	capnography
	22.01.04	noninvasive BP monitoring
	22.01.05	thermometry
	22.01.06	telemetry
	22.02	Demonstrate proper placement of a cardiac monitor and diagnostic ECG leads.
23.0	<b>Reassessment:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of how and when to perform a reassessment for all patient situations. – The student will be able to:	
	23.01	Describe the components of reassessment and demonstrate the skills involved.
	23.02	Discuss the reasons for repeating the primary assessment as part of the reassessment.
	23.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
	23.04	Demonstrate the reassessment of patients across the life span.
24.0	<b>Medical Overview:</b> Demonstrate a simple depth, foundation breadth of knowledge of pathophysiology, assessment and management of medical complaints. – The student will be able to:	
	24.01	Identify factors that complicate patient assessment:
	24.01.01	scene safety
	24.01.02	environmental factors
	24.01.03	chief complaint
	24.01.04	EMT preconceptions
	24.01.05	distracting injuries
	24.01.06	tunnel vision
	24.01.07	patient cooperation
	24.01.08	EMT attitude
	24.02	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
25.0	<b>Neurology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of neurologic disorders/emergencies across the life span. – The student will be able to:	
	25.01	Review the anatomy and physiology of the nervous system.
	25.02	Describe the pathophysiology of the following neurologic disorders:
	25.02.01	altered mental status
	25.02.02	stroke
	25.02.03	transient ischemic attack
	25.02.04	headache
	25.02.05	seizures
	25.02.06	syncope
	25.03	Discuss and identify the causes, signs and symptoms of ischemic strokes, hemorrhagic strokes, and transient ischemic attacks and their similarities and differences.

25.04	Discuss and demonstrate how to use a stroke scoring system in the assessment of patients with suspected stroke.
25.05	Define and differentiate generalize seizure, partial seizure and status epilepticus and list their possible causes.
25.06	Define and differentiate migraine headache, sinus headache, tension headache and discuss how to distinguish harmless headaches from something more serious.
25.07	Define “altered mental status” and identify the possible causes.
25.08	Describe and demonstrate the assessment and management of the patient with various neurological emergencies in all age groups to include:
25.08.01	strokes
25.08.02	headaches
25.08.03	seizures
25.08.04	altered mental status
25.09	Discuss the transport of the stroke patient to the appropriate treatment center.
26.0	<b>Abdominal and Gastrointestinal Disorder:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of abdominal and gastrointestinal disorders/emergencies across the life span. – The student will be able to:
26.01	Review the basic anatomy and physiology the gastrointestinal, genital and urinary systems.
26.02	Define and describe the pathophysiology of the following abdominal and gastrointestinal disorders:
26.02.01	abdominal pain
26.02.02	acute abdomen
26.02.03	peritonitis
26.02.04	appendicitis
26.02.05	pancreatitis
26.02.06	cholecystitis
26.02.07	gastrointestinal bleeding
26.02.08	esophageal varices
26.02.09	gastroenteritis
26.02.10	ulcers
26.02.11	intestinal obstruction
26.02.12	hernia
26.02.13	abdominal aortic aneurysm
26.03	Identify the signs and symptoms of common GI disorders.
26.04	Describe and demonstrate the assessment and management of the patient with various gastrointestinal emergencies.
26.05	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.
27.0	<b>Immunology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of immunology disorders/emergencies across the life span. – The student will be able to:
27.01	Define and differentiate allergic reaction and anaphylaxis.

27.02	Describe the pathophysiology of the following immunology disorders: 27.02.01 allergic reaction 27.02.02 anaphylaxis 27.02.03 anaphylactic shock
27.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an allergic or anaphylactic reaction.
27.04	Review the following for the epinephrine auto-injector: 27.04.01 generic and trade names 27.04.02 medication forms 27.04.03 dose 27.04.04 administration 27.04.05 action 27.04.06 contraindications
27.05	Demonstrate the use of epinephrine auto-injector.
27.06	Review the anatomy and physiology of the organs and structures related to anaphylaxis.
27.07	Describe the incidence, morbidity and mortality of anaphylaxis.
27.08	Recognize the signs and symptoms related to anaphylaxis.
27.09	Describe the risk factors for and prevention of anaphylaxis and appropriate patient education.
27.10	Discuss common antigens most frequently associated with anaphylaxis.
27.11	Explain the importance of separating the patient from the allergen when possible.
28.0	<b>Infectious Disease:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment and management of a patient who may have an infectious disease across the life span. – The student will be able to:
28.01	Discuss the causes of infectious diseases
28.02	Describe the pathophysiology of infectious diseases of significant public health concern.
28.03	Describe and demonstrate the assessment and management of the patient in all age groups experiencing an infectious disease.
28.04	Discuss mandatory notification to State or Federal agencies of various diseases.
28.05	Identify patients with risk factors for infectious disease.
28.06	Explain the principles and practices of infection control in prehospital care.
28.07	Describe and discuss the rationale for the various types of PPE.
28.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).

28.09	Discuss decontamination of the ambulance and disinfection of patient care equipment, and areas in which care of the patient occurred.
28.10	Describe the actions to take if the EMS provider is exposed to an infectious disease.
28.11	Demonstrate the ability to comply with body substance isolation guidelines.
28.12	Discuss the pathophysiology, risk factors, assessment, and prehospital management of sepsis/systemic inflammatory response syndrome (SIRS)
29.0	<b>Endocrine Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of endocrine disorders/emergencies across the life span. – The student will be able to:
29.01	Review the anatomy and physiology of the endocrine system and its main function in the body.
29.02	Describe the pathophysiology and signs and symptoms of the following endocrine disorders:
29.02.01	Insulin Dependent Diabetes Mellitus
29.02.02	Non-Insulin Dependent Diabetes Mellitus
29.02.03	Hypoglycemia
29.02.04	Hyperglycemia
29.02.05	Diabetic Ketoacidosis(DKA)
29.02.06	Hyperglycemic Hyperosmolar Non-ketotic Syndrome (HHNS)
29.03	Define and differentiate between Type I and Type II Diabetes.
29.04	Identify and demonstrate the steps in the management of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
29.05	Review the following for oral glucose:
29.05.01	generic and trade names
29.05.02	medication forms
29.05.03	dose
29.05.04	administration
29.05.05	action
29.05.06	contraindications
29.06	Demonstrate the steps of using a glucometer device and administering oral glucose.
29.07	Describe and demonstrate the assessment and the management of the patient experiencing an endocrinologic emergency to include hypo- and hyper-glycemia.
29.08	Discuss the general assessment findings associated with endocrinologic emergencies.
30.0	<b>Psychiatric:</b> Demonstrate a fundamental depth, foundational breadth of knowledge regarding the assessment and management of psychiatric emergencies across the life span. – The student will be able to:
30.01	Differentiate among behavior, psychiatric disorders and behavioral emergencies
30.02	Discuss common psychiatric disorders and behavioral emergencies.
30.03	Discuss the general factors that may cause an alteration in a patient's behavior.

30.04	Discuss the risk factors/signs or symptoms of various psychiatric emergencies to include suicide.
30.05	Manage a behavioral emergency scenario applying knowledge of medical/legal Florida Statutes.
30.06	Describe and demonstrate the assessment and management of the patient experiencing a behavioral or psychiatric emergency.
30.07	Describe the biological, psychosocial, and sociocultural influences on psychiatric disorders.
30.08	Describe the special considerations for the safety of the EMS provider and EMS crew, the patient and bystanders when dealing with behavioral and psychiatric emergencies.
30.09	Describe and demonstrate methods of restraint that may be used in the management of a patient with a behavioral emergency.
30.10	Explain the importance of provider behavior and communication in the care of a patient with a behavioral emergency.
31.0	<b>Cardiovascular:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of cardiovascular emergencies across the life span. – The student will be able to:
31.01	Review the basic anatomy and physiology of the cardiovascular system.
31.02	Describe the pathophysiology and signs and symptoms of the following cardiovascular disorders:
31.02.01	acute coronary syndrome
31.02.02	angina pectoris
31.02.03	thromboembolism
31.02.04	myocardial infarction
31.02.05	hypertensive emergencies
31.02.06	aortic aneurysm/dissection
31.02.07	left and right sided heart failure
31.02.08	cardiogenic shock
31.02.09	cardiac arrest
31.03	Describe and demonstrate the assessment and management of the patient experiencing a cardiac emergency.
31.04	Discuss the indications and contraindications for automated external defibrillation (AED).
31.05	Explain the impact of age and weight on defibrillation.
31.06	Discuss the position of comfort for patients with various cardiac emergencies.
31.07	Explain the rationale for early defibrillation.
31.08	Discuss and differentiate among various types of external defibrillators.
31.09	Discuss and differentiate among the various types of implanted cardiac devices.
31.10	Understand the importance of maintenance and operators check list for AED's.
31.11	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.

31.12	Explain the role medical direction plays in the use of automated external defibrillation.
31.13	Explain the rationale for administering nitroglycerin and ASA to a patient with chest pain or discomfort.
31.14	Demonstrate the assessment and documentation of patient response to the automated external defibrillator.
31.15	Demonstrate the assessment and documentation of patient response to nitroglycerin.
31.16	Discuss the purpose and use of CPR assist devices.
32.0	<b>Toxicology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of toxicological (poisoning and overdose) emergencies across the life span. – The student will be able to:
32.01	Define and differentiate among toxicology, poisoning, and overdose.
32.02	Describe the pathophysiology and signs and symptoms of the following toxicological emergencies, including but not limited to:
32.02.01	food poisoning
32.02.02	carbon monoxide poisoning
32.02.03	cyanide poisoning
32.02.04	exposure to acid or alkaline substances
32.02.05	exposure to hydrocarbons
32.02.06	methanol ingestion
32.02.07	isopropanol ingestion
32.02.08	ethylene glycol ingestion
32.02.09	exposure to poisonous plants
32.02.10	drug withdrawal
32.02.11	alcoholic syndrome
32.02.12	withdrawal syndrome (including delirium tremens)
32.02.13	illicit drug use
32.02.14	medication overdose
32.02.15	opioid overdose
32.02.16	organa phosphate overdose
32.03	Discuss various ways that toxins enter the body.
32.04	Discuss and demonstrate the assessment and management for the patient with a toxicological emergency.
32.05	Discuss the role of the Poison Control Center with the nationwide contact number 800-222-1222 in the United States.
32.06	Explain the rationale for contacting medical direction early in the prehospital management of a patient with a toxicological emergency.
32.07	Review the following for Narcan (naloxone):
32.07.01	generic and trade names
32.07.02	medication forms
32.07.03	dose
32.07.04	administration

	32.07.05	action
	32.07.06	contraindications
33.0	<b>Respiratory:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of respiratory disorders/emergencies across the life span – The student will be able to:	
33.01	Review the basic anatomy and physiology of the respiratory system.	
33.02	Describe the pathophysiology and signs and symptoms of the following respiratory disorders:	
	33.02.01	Chronic Obstructive Pulmonary Disease
	33.02.02	Asthma
	33.02.03	Pulmonary Edema
	33.02.04	Spontaneous Pneumothorax
	33.02.05	Hyperventilation Syndrome
	33.02.06	Cystic Fibrosis
	33.02.07	Pulmonary Embolism
	33.02.08	Pneumonia
	33.02.09	Viral Respiratory Infections
	33.02.10	Poisonous Exposures
	33.02.11	Bacterial respiratory infections
33.03	Discuss signs of adequate air exchange.	
33.04	Discuss the signs and symptoms of a patient across the continuum from respiratory distress to failure.	
33.05	Describe and demonstrate the assessment and management of the patient with a respiratory emergency.	
33.06	Review the following for the metered-dose inhalers and small volume nebulizers for medications within the scope of practice of the EMT:	
	33.06.01	generic name
	33.06.02	medication forms
	33.06.03	dose
	33.06.04	administration
	33.06.05	action
	33.06.06	indications
	33.06.07	contraindications
33.07	Describe and demonstrate the steps in facilitating the use of an inhaler and a small volume nebulizer.	
33.08	Differentiate between upper and lower airway obstruction.	
33.09	Demonstrate assessment and interpretation of normal and abnormal lung and breath sounds.	
34.0	<b>Hematology:</b> Demonstrate a simple depth, simple breadth of knowledge of the assessment, and management of hematology disorders across the life span. –The student will be able to:	
34.01	Review the compositions and functions of blood and plasma.	

34.02	Describe the pathophysiology of the following hematology disorders:
34.02.01	Anemia
34.02.02	Sickle Cell Anemia / Sickle Cell Crisis
34.02.03	Hemophilia
34.03	Describe and demonstrate the assessment and the management of the patient with a hematological disorder.
35.0	<b>Genitourinary /Renal:</b> Demonstrate a simple depth, simple breath of knowledge of the assessment and management of genitourinary/renal emergency across the life span. – The student will be able to:
35.01.01	Review the basic anatomy and physiology of the genitourinary and renal systems.
35.02	Describe the pathophysiology and signs and symptoms of the following genitourinary/ renal disorders:
35.02.01	urinary tract infection
35.02.02	kidney stones
35.02.03	kidney failure
35.03	Discuss the basic principles of kidney dialysis.
35.04	Discuss the recognition and complications of urinary catheters.
35.05	Describe and demonstrate the assessment and management of the patient with a dialysis emergency.
36.0	<b>Gynecology:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of gynecologic emergencies across the life span. – The student will be able to:
36.01	Review the basic anatomy and physiology of the female reproductive system.
36.02	Describe the pathophysiology and signs and symptoms of the following gynecologic disorders and emergencies, including but not limited to:
36.02.01	sexual assault
36.02.02	non-traumatic vaginal bleeding
36.02.03	menstrual pain
36.02.04	ovarian cyst
36.02.05	endometritis
36.02.06	endometriosis
36.02.07	pelvic inflammatory disease
36.02.08	Sexually Transmitted Disease
36.03	Describe and demonstrate the assessment and management of the patient experiencing a gynecologic emergency.
36.04	Describe the assessment and management of a patient who has experienced a sexual assault including the psychosocial impact and assessment findings/presentations.
36.05	Discuss the professional and psychological importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
36.06	Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
37.0	<b>Non-Traumatic Musculoskeletal Disorders:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the assessment and management of non-traumatic fractures across the life span. – The student will be able to:



37.01	Review the basic anatomy and physiology of the musculoskeletal system.
37.02	Describe and demonstrate the assessment and management of the patient in all age groups with a non-traumatic musculoskeletal emergency.
38.0	<b>Diseases of the Eyes, Ears, Nose, and Throat:</b> Demonstrate a simple depth, simple breadth of knowledge of assessment and management of diseases of the Eyes, Ears, Nose, and Throat across the life span –The student will be able to:
38.01	Describe and demonstrate the assessment and management of the patient in all age groups with abnormal conditions affecting the eyes, ears, nose and throat, including epistaxis.
39.0	<b>Shock and Resuscitation:</b> Demonstrate a fundamental knowledge of the causes, pathophysiology, and management of shock and respiratory failure across the life span. – The student will be able to:
39.01	Discuss and identify causes and pathophysiology of the categories of hemorrhage and shock.
39.02	Review causes and pathophysiology of respiratory failure and arrest.
39.03	Review causes and pathophysiology of cardiac failure or arrest.
39.04	Discuss the various types and degrees of shock.
39.05	Discuss post resuscitation management.
39.06	Explain the system components of CPR, the links in the AHA chain of survival and how each relates to patient survival.
39.07	Define and differentiate between compensated and decompensated shock.
39.08	Discuss the importance of teamwork in the successful management of the critical patient.
39.09	Demonstrate how to perform one and two rescuer CPR, adult, child, and infant.
39.10	Demonstrate how to perform rescuer level appropriate defibrillation in an adult, child, and infant patient.
39.11	Demonstrate rapid decision making based on differential field diagnosis of the critical patient with a peri-arrest condition.
39.12	Describe and demonstrate the assessment and management of the patient with hemorrhage and shock.
40.0	<b>Trauma Overview:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of the trauma patient across the life span. – The student will be able to:
40.01	Discuss pathophysiology of the trauma patient.
40.02	Discuss the components of a comprehensive trauma systems and levels of trauma centers.
40.03	Describe the considerations for different transportation modes to a trauma center.
40.04	Discuss the kinematics of blunt and penetrating trauma.
40.05	Discuss and describe significant and non-significant Mechanism of Injury (MOI) and provide examples of each.

40.06	Demonstrate the application of the State of Florida's trauma scorecard methodologies as required in Florida Statute and Florida Administrative Code (F.A.C.).
40.07	Discuss the National Trauma Triage Protocol of injured Patients.
40.08	Discuss forming a field impression and utilizing available information to determine a differential diagnosis.
40.09	Identify the need for rapid intervention transport of the trauma patient.
41.0	<b>Bleeding:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of bleeding across the life span. – The student will be able to:
41.01	Review the anatomy and physiology of the circulatory system.
41.02	Discuss the different types of bleeding and classes of hemorrhage.
41.03	Review signs and symptoms of shock (hypo-perfusion).
41.04	Demonstrate effective hemorrhage control to include application of a tourniquet.
41.05	Review the pathophysiology of hemorrhagic shock.
41.06	Recognize the need for rapid transport for patients that are bleeding and showing signs of shock (hypo-perfusion).
41.07	Describe and demonstrate the assessment and management of a patient with hemorrhagic shock.
41.08	Discuss the possible complications of an improperly applied dressing, bandage, tourniquet, and hemostatic agents.
42.0	<b>Chest Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment and management of chest trauma across the life span. –.The student will be able to:
42.01	Review the anatomy and physiology of the thoracic/chest cavity and respiratory system.
42.02	Differentiate between a pneumothorax (open, simple and tension) and hemothorax.
42.03	Discuss the pathophysiology, signs and symptoms, and MOI of myocardial injuries, including the following:
42.03.01	pericardial tamponade
42.03.02	myocardial contusion
42.03.03	myocardial rupture
42.03.04	commotio cordis
42.03.05	aortic shearer
42.04	Discuss the pathophysiology, signs and symptoms, and MOI of specific chest wall injuries, including the following:
42.04.01	rib fracture
42.04.02	flail segment
42.04.03	sternal fracture
42.05	Describe and demonstrate the assessment and management of chest trauma.
43.0	<b>Abdominal and Genitourinary Trauma:</b> Demonstrate a fundamental depth, simple breadth of knowledge of pathophysiology, assessment

	and management of abdominal and genitourinary trauma across the life span. – The student will be able to:
43.01	Review the anatomy and physiology of the abdominal cavity and genitourinary system.
43.02	Discuss the pathophysiology, signs and symptoms, and MOI for abdominal trauma including hollow and solid injuries.
43.03	Describe and demonstrate the assessment and management of a patient with a suspected abdominal or genitourinary injury/trauma.
44.0	<b>Orthopedic Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of orthopedic trauma across the life span. – The student will be able to:
44.01	Review the anatomy and physiology of the musculo-skeletal system.
44.02	Discuss pathophysiology, signs and symptoms, and MOI for orthopedic trauma.
44.03	Discuss the different types of orthopedic trauma including fracture classifications.
44.04	Explain the rationale for stabilization of an injured extremity.
44.05	Describe and demonstrate the assessment and management of a patient with a suspected orthopedic trauma.
44.06	Discuss the following management techniques:
44.06.01	heat therapy
44.06.02	cold therapy
44.06.03	splinting
44.07	List the six “P’s” of orthopedic injury assessment.
44.08	Discuss the need for assessment of distal pulses, motor, and sensation before and after splinting.
44.09	Review age-associated changes in the bones.
44.10	Discuss the proper procedures to package an amputated body part for replantation.
44.11	Explain the rationale for splinting at the scene versus load and go.
44.12	Demonstrate the proper use of various splinting materials and devices to include improvised and traction splints.
45.0	<b>Soft Tissue Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of soft tissue trauma across the life span. – The student will be able to:
45.01	Review anatomy and physiology of the integumentary system to include the layers of the skin.
45.02	Describe the pathophysiology, signs and symptoms, and MOI of soft tissue trauma.
45.03	Describe and demonstrate the assessment and management of various soft tissue injuries.
45.04	Identify types of burn injuries, including:
45.04.01	thermal burn

	45.04.02	chemical burn
	45.04.03	electrical burn
	45.04.04	radiation exposure
45.05	Describe the depth classifications of burn injuries, including:	
	45.05.01	superficial burn
	45.05.02	partial-thickness burn
	45.05.03	full-thickness burn
	45.05.04	other depth classifications
45.06	Describe and demonstrate methods for determining body surface area percentage of a burn injury including the "rule of nines," the "rule of palms," and other methods.	
45.07	Explain how the seriousness of a burn is related to its depth and percent of body surface area (BSA) involved.	
45.08	Review the various management techniques for hemorrhage control.	
45.09	Differentiate among the types of injuries requiring the use of an occlusive versus non- occlusive dressing.	
45.10	Demonstrate the assessment and management of specific burn injuries including:	
	45.10.01	thermal
	45.10.02	inhalation
	45.10.03	chemical
	45.10.04	electrical
	45.10.05	radiation
46.0	<b>Head, Facial, Neck, and Spine Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of head, facial, neck and spine trauma across the life span. – The student will be able to:	
46.01	Review the anatomy and physiology of the head, face, neck and spine.	
46.02	Describe the pathophysiology, signs and symptoms, and MOI for head, face, neck, and spine trauma.	
46.03	Describe and demonstrate the assessment and management of a patient with the following traumas to the head, face, neck, and spine:	
	46.03.01	penetrating neck trauma
	46.03.02	laryngotracheal injury
	46.03.03	skull fracture
	46.03.04	facial fracture
	46.03.05	eye injury (foreign body)
	46.03.06	dental trauma
46.04	Recognize and manage life threats due to face, head, neck, and spine trauma.	
46.05	Discuss and demonstrate the utilization of the Glasgow Coma Scale.	
47.0	<b>Nervous System Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment, and management of nervous system trauma across the life span. – The student will be able to:	
47.01	Review the anatomy and physiology of the nervous system.	

47.02	Discuss the pathophysiology, signs and symptoms, and MOI for brain and spinal cord trauma.
47.03	Describe and demonstrate the assessment and management of a patient with a brain and/or spinal cord trauma.
47.04	Discuss the rationale and potential complications of spinal motion restriction of the entire spine when a cervical spine injury is suspected.
47.05	Given a scenario, discuss whether or not to remove a helmet prior to transport of a patient.
47.06	Demonstrate various methods for stabilization and removal of a helmet.
47.07	Discuss documentation of assessment before, during, and after spinal motion restriction.
48.0	<b>Special Considerations in Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of trauma patients with special considerations across the life span. – The student will be able to:
48.01	Review the anatomy and physiology for the following trauma patients: 48.01.01 pregnant 48.01.02 pediatric 48.01.03 geriatric
48.02	Discuss the pathophysiology, signs and symptoms, and MOI of trauma in the following patients: 48.02.01 pregnant 48.02.02 pediatric 48.02.03 geriatric
48.03	Discuss and demonstrate unique assessment and management considerations for the following trauma patients: 48.03.01 pregnant 48.03.02 pediatric 48.03.03 geriatric 48.03.04 cognitively impaired
49.0	<b>Environmental Emergencies:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of pathophysiology, assessment and management of environmental emergencies across the life span. – The student will be able to:
49.01	Define drowning and discuss its incidence, risk factors and prevention.
49.02	Discuss the pathophysiology, signs and symptoms, and MOI of the following: 49.02.01 drowning and water related incidents 49.02.02 temperature-related illness 49.02.03 bites and envenomation 49.02.04 dysbarism such as high-altitude injuries 49.02.05 diving injuries 49.02.06 lightning (electrical) injury 49.02.07 high altitude illness 49.02.08 radiation exposure
49.03	Describes and demonstrate the assessment and management for a patient with the following: 49.03.01 drowning and water related incidents 49.03.02 temperature-related illness

49.03.03	bites and envenomation
49.03.04	dysbarism such as high-altitude injuries
49.03.05	diving injuries
49.03.06	lightning (electrical) injury
49.03.07	high altitude illness
49.03.08	radiation exposure
49.04	Discuss the fundamental principles of the gas laws including: Boyle's, Dalton, Henry and Charles.
49.05	Discuss scene management and provider safety considerations for a variety of environmental emergencies.
49.06	Explain the five ways a body can lose heat.
49.07	Discuss potentially life threatening venomous species of insects, spiders and snakes in the U.S.
50.0	<b>Multi-Systems Trauma:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of the pathophysiology, assessment, and management of multi-system trauma and blast injuries across the life span. – The student will be able to:
50.01	Discuss the pathophysiology, signs and symptoms, and MOI of multi-system trauma and blast injuries.
50.02	Describe and demonstrate assessment and management considerations for a patient of multi system trauma and blast injuries.
51.0	<b>Obstetrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the obstetric patient within the scope of practice of the EMT. – The student will be able to:
51.01	Identify and describe the anatomical and the physiological changes during pregnancy.
51.02	Define the stages of labor and discuss how to assess them.
51.03	Differentiate between cephalic and abnormal delivery.
51.04	Describe the management of a patient with pre-delivery emergencies.
51.05	Discuss and demonstrate the patient care measures for all stages of labor in a cephalic delivery for the mother and the newborn.
51.06	Describe the management of the mother post-delivery.
51.07	Discuss and demonstrate the patient care measures for all stages of labor in abnormal deliveries for the mother and the newborn.
51.08	Describe the procedures for handling complications of delivery.
51.09	Describe special considerations when meconium is present in amniotic fluid or during delivery.
51.10	Identify the factors that lead to premature birth and low birth weight newborns.
51.11	Demonstrate the procedures for handling complications of pregnancy including pre-eclampsia, eclampsia, and high risk.
52.0	<b>Neonatal Care:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the newborn and neonatal patient within the scope of practice of the EMT. – The student will be able to:

52.01	Discuss and demonstrate assessment and management considerations of a neonate.
52.02	Define the term neonate.
52.03	Describe special patient care considerations of a premature baby.
52.04	Calculate the Apgar score given various newborn situations.
52.05	Discuss the common signs when ventilator assistance is appropriate for a neonate.
52.06	Discuss and demonstrate the steps in resuscitation of a neonate.
52.07	Review the signs of hypovolemia in a newborn.
52.08	Discuss the effects maternal narcotic usage has on the newborn.
52.09	Discuss the management/treatment plan for vomiting in the neonate.
52.10	Discuss the assessment findings associated with common birth injuries in the neonate.
53.0	<b>Pediatrics:</b> Demonstrate a fundamental depth, fundamental breath of knowledge of management of the pediatric patient within the scope of practice of the EMT. – The student will be able to:
53.01	Review the anatomy, physiology and pathophysiology differences of patients.
53.02	Discuss the differences in approaching and assessing patients.
53.03	Discuss and demonstrate assessment and management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
53.04	Describe the selection of appropriate airway adjuncts and ventilation devices.
53.05	Discuss complications of improper utilization of airway adjuncts and ventilation devices.
53.06	Describe the common causes, assessment and management of respiratory distress, failure, or arrest.
53.07	Discuss the common causes, assessment and management of hypo-perfusion.
53.08	Discuss the common causes, assessment and management of cardiopulmonary arrest.
53.09	Describe the common causes, assessment and management of altered level of consciousness.
53.10	Describe the common causes, assessment and management of trauma.
53.11	Describe the common causes, assessment and management of neurological emergencies.
53.12	Demonstrate proper technique for administering blow-by oxygen.
53.13	Review proper technique for suctioning.

53.14	Review appropriate use of airway adjuncts and ventilation devices.
53.15	Review age appropriate basic airway clearing maneuvers for a completely obstructed airway.
54.0	<b>Geriatrics:</b> Demonstrate a fundamental depth, foundational breadth of knowledge of management of the geriatric patient within the scope of practice of the EMT. – The student will be able to:
54.01	Define and discuss the term geriatrics.
54.02	Review the anatomy, physiology and pathophysiology of the geriatric patient.
54.03	Discuss common emotional and psychological concerns and conditions of the geriatric patient.
54.04	Discuss the importance of fall prevention with the geriatric patient.
54.05	Describe principles that should be employed when assessing and communicating with the geriatric patient.
54.06	Describe the common causes, assessment, and management of the geriatric patient with a medical, trauma, or psychosocial complaint.
55.0	<b>Patients with Special Challenges:</b> Demonstrate a simple depth, simple breadth of knowledge of the management of the patient with special challenges across the life span. –The student will be able to:
55.01	Discuss the special considerations required when providing emergency care to patients with:
55.01.01	abuse/neglect of vulnerable populations
55.01.02	homelessness
55.01.03	poverty
55.01.04	bariatrics
55.01.05	tech dependent
55.01.06	hospice/terminally ill
55.01.07	tracheostomy
55.01.08	home care
55.01.09	sensory deficit/loss
55.01.10	developmental disability
55.02	Discuss special considerations regarding common medical devices used in the home care of patients with special challenges including:
55.02.01	respiratory devices
55.02.02	cardiac devices
55.02.03	gastro-urinary devices
55.02.04	central & peripheral IV catheters
55.03	Describe home care and the types of patients it serves and the services it encompasses.
55.04	Differentiate between hospice/palliative care and curative care.
55.05	Discuss the role of the EMT as a patient advocate for vulnerable populations.
56.0	<b>Principles of Safely Operating a Ground Ambulance:</b> Demonstrate a simple depth, foundational breadth of knowledge of risks and



responsibilities of transport. – The student will be able to:	
56.01	Discuss the importance of performing regular vehicle and equipment inspection.
56.02	Demonstrate how to perform a daily inspection of an ambulance.
56.03	Review the general provisions of Florida laws relating to the operation of the ambulance.
56.04	Discuss the guidelines for operating an ambulance safely during emergency and non-emergency situation/incident.
56.05	Review considerations that are required for ensuring scene safety, including personal safety, patient safety, and traffic control.
56.06	Review how to clean and disinfect the ambulance and equipment.
57.0	<b>Incident Management:</b> Demonstrate a fundamental depth, fundamental breadth of knowledge of establishing and working within the incident management system. – The student will be able to:
57.01	Discuss the importance of NIMS (National Incident Management System) and its functional components.
57.02	Discuss unified command and when it is applicable.
57.03	Describe the role of command and the procedures for transfer of command.
57.04	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents:
57.04.01	safety
57.04.02	logistics
57.04.03	rehabilitation
57.04.04	staging,
57.04.05	treatment
57.04.06	triage
57.04.07	transportation
57.04.08	extrication/rescue
57.04.09	morgue
57.04.10	communications
57.05	Discuss the physical and psychological signs of critical incident stress.
58.0	<b>Multiple Casualty Incidents:</b> Demonstrate a simple depth, foundational breadth of knowledge of responding to an emergency during a multiple casualty incident. – The student will be able to:
58.01	Review essential elements of scene size-up when arriving at a potential MCI.
58.02	Describe the role of the rescuers and EMS systems in planning for MCIs and disasters.
58.03	Describe the role of the physician at multiple casualty incidents.
58.04	Define triage and describe the principles of triage.

58.05	Describe the START (simple triage and rapid treatment) and JUMP START method of initial triage.
58.06	Describe techniques used to allocate patients to hospitals and track them.
58.07	Discuss and describe the essential equipment to provide logistical support to MCI operations.
58.08	Describe the role of critical incident stress management during and after MCIs.
58.09	Demonstrate the use of local/regional triage tagging system.
59.0	<b>Air Medical:</b> Demonstrate a simple depth, simple breadth of knowledge of safe air medical operations and criteria for utilizing air medical response. –The student will be able to:
59.01	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
59.02	Describe the capabilities, protocols, and methods for accessing air medical transport.
59.03	Review the advantages and disadvantages of air medical transport.
59.04	Review the conditions/situations in which air medical transport should be considered.
60.0	<b>Vehicle Extrication:</b> Demonstrate a simple depth, simple breadth of knowledge for safe vehicle extrication and use of simple hand tools. – The student will be able to:
60.01	Describe the role of the EMT in patient rescue and vehicle extrication
60.02	Describe personal and patient safety during vehicle extrication.
60.03	Explain the difference between simple access and complex access in vehicle extrication.
60.04	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
60.05	Discuss the use of simple hand tools used for vehicle extrication.
60.06	Discuss and describe the hazards and safe practices associated with the following vehicle components:
60.06.01	energy absorbing bumpers
60.06.02	air bag/supplemental restraint systems
60.06.03	catalytic converters and conventional fuel systems
60.06.04	stored energy
60.06.05	hybrid-electric vehicles
60.07	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles.
60.08	Describe the electrical hazards commonly found at highway incidents (above and below ground).
60.09	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
60.10	Explain typical door anatomy and methods to gain access to the patient.

61.0	<b>Hazardous Materials Awareness:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating in a cold zone at a hazardous material or other special incident. – The student will be able to:
61.01	Identify and describe resources for substance identification, decontamination, and treatment information, including but not limited to the following:
61.01.01	poison control center
61.01.02	medical control
61.01.03	material safety data sheets (MSDS),
61.01.04	reference textbooks
61.01.05	computer databases
61.01.06	Computer-Aided Management of Emergency Operations (CAMEO)
61.01.07	CHEMTREC
61.01.08	technical specialists
61.01.09	Agency for toxic substances and disease registry
61.02	Explain primary and secondary contamination risk.
61.03	Review routes of exposure.
61.04	Discuss how the substance and route of contamination alters triage and decontamination methods.
61.05	Explain the common signs, symptoms, and treatment for the following substances:
61.05.01	corrosives
61.05.02	pesticides
61.05.03	chemical asphyxiants
61.05.04	hydrocarbon solvents
61.06	Identify local facilities and resources capable of treating patients exposed to hazardous materials.
61.07	Determine the appropriate level of PPE by considering the following:
61.07.01	types
61.07.02	application
61.07.03	use and limitations
61.07.04	use of chemical compatibility chart
61.08	Explain specific decontamination procedures.
61.09	Discuss the designated HAZMAT control zones (HOT, WARM, and COLD).
61.10	Discuss an emergency two-step decontamination process.
61.11	Identify DOT Labels, placards and markings that are used to designate HAZMAT materials.
61.12	Demonstrate the ability to use a variety of reference materials to identify a HAZMAT material.
62.0	<b>Mass Casualty Incidents Due to Terrorism and Disaster:</b> Demonstrate a simple depth, simple breadth of knowledge of risks and responsibilities of operating on the scene of a natural or man-made disaster. – The student will be able to:

62.01	Describe the role of the EMT on the scene of a natural or man-made disaster.
62.02	Define the different types of terrorism and provide examples of incidents of each.
62.03	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.
62.04	Discuss the National Terrorism Advisory System.
62.05	Discuss factors to consider when responding to a terrorist situation.
62.06	Review important actions to take at the scene of a terrorist event such as:
62.06.01	scene safety
62.06.02	personal protection
62.06.03	notification procedures
62.06.04	available resources
62.06.05	working with in the command system
62.07	List and describe the main categories of weapons of mass destruction.
62.08	Discuss the different types of chemical agents and their signs and symptoms.
62.09	Review the treatment and management of patients exposed to various types of chemical agents and radiation.
62.10	Review the different types of radiations and their effect on the human body.
62.11	Discuss the use of a nerve agent antidote kit.

## Additional Information

### Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### Special Notes

The **Bureau of Fire Standards and Training (BFST) is responsible for** establishing uniform minimum standards for the employment and training of firefighters and volunteer firefighters and for establishing and maintaining firefighting training programs, curricula requirements, and certification of training schools and training school instructors.

The Curriculum Development staff is responsible for the design, implementation, maintenance, evaluation, and revision of job-related curricula for the Bureau of Fire Standards and Training (BFST) approved firefighters and volunteer firefighters, advanced, specialized, and specialized instructor training programs for firefighters.

### Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals and Florida Public Service Association (FPSA) are the inter-curricular career and technical student organizations providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

## **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 10, and Reading 10. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education  
Curriculum Framework

**Program Title:** Radiologic Technology  
**Program Type:** Career Preparatory  
**Career Cluster:** Health Science

**This program is only authorized to be offered by Marion Technical College**

Career Certificate Program	
Program Number	W170210
CIP Number	0351091100
Grade Level	30, 31
Standard Length	2700 clock hours
Teacher Certification	Refer to the <b><u>Program Structure</u></b> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2034 Radiologic Technologists
Basic Skills Level	Mathematics: 11 Language: 11 Reading: 11

**Purpose**

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Health Science career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Health Science career cluster.

The purpose of this program is to prepare students for employment as Radiographers, Radiologic Technologists SOC Code 29-2034 (Radiologic Technologists/Technicians) or to provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to introduction to radiography, medical ethics and law, medical terminology, methods of patient care, human structure and function, radiographic procedures, principles of radiographic exposure, imaging equipment, image processing, radiation physics,

principles of radiation protection, principles of radiation biology, radiographic pathology, introduction to quality assurance, introduction to computer literacy, and clinical education. The curriculum includes a plan for well-structured competency based clinical education.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

**Program Structure**

This program is a planned sequence of instruction consisting of 3 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	RTE0004	Fundamentals of Radiologic Technology	TEC X Ray @7 7G	96 hours	29-2034
	RTE0410	Radiographic Imaging & Exposure I		96 hours	
	RTE0505	Radiographic Procedures I		96 hours	
	RTE0809	Clinical Education I		312 hours	
B	RTE0450	Radiographic Imaging & Exposure II		90 hours	
	RTE0506	Radiographic Procedures II		90 hours	
	RTE0507	Radiographic Procedures III		66 hours	
	RTE0819	Clinical Education II		504 hours	
C	RTE0015	Advanced Modality Imaging		54 hours	
	RTE0780	Radiographic Pathology& Directed Research		86 hours	
	RTE0610	Radiation Physics		86 hours	
	RTE0829	Clinical Education III		220 hours	
	RTE0839	Advanced Clinical Education IV		340 hours	
	RTE0380	Radiation Biology & Radiation Protection	51 hours		
	RTE0939	Radiography Seminar	153 hours		
	RTE0849	Advanced Clinical Education V	360 hours		



## **Regulated Programs**

**The program must be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a Certified Radiologic Technologist. As specified in Chapter 468 Part IV F.S. and Chapter 64E-3 F.A.C.**

The program must be accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300, or any other appropriate accrediting agency acceptable to the American Registry of Radiologic Technologists (ARRT).

## **National Standards (NS)**

Programs identified as having Industry or National Standards have been cross walked with the corresponding standards and/or benchmarks. Industry or National Standards for the Radiologic Technology program can be found online.

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.

11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

### **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate a functional knowledge of medical terminology required in radiologic science.
- 02.0 Convey an understanding of the ethics and laws that impact Radiologic Sciences at both the state and federal levels.
- 03.0 Demonstrate introductory knowledge of radiologic science and the health care system.
- 04.0 Demonstrate knowledge of and perform patient care procedures required in radiologic sciences.
- 05.0 Demonstrate an understanding of pharmacology and venipuncture procedures as it relates to radiologic science.
- 06.0 Demonstrate proficiency in the skills, techniques and knowledge required for image analysis.
- 07.0 Demonstrate proficiency in the skills, techniques and knowledge required to operate imaging equipment.
- 08.0 Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including x-ray production, image formation, and factors related to radiographic quality.
- 09.0 Demonstrate an understanding of the structure and function of the human body with a focus on the muscular, endocrine, respiratory, urinary and appendicular skeletal systems.
- 10.0 Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate radiographic procedures.
- 11.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice.
- 12.0 Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including image acquisition and processing, scatter radiation control, and image evaluation.
- 13.0 Demonstrate an understanding of the concepts and equipment required of digital image acquisition and display.
- 14.0 Demonstrate an understanding of the structure and function of the human body with a focus on the axial skeletal system.
- 15.0 Demonstrate an understanding of the structure and function of the human body with a focus on the circulatory/cardiovascular, digestive and reproductive systems.
- 16.0 Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate fluoroscopic procedures.
- 17.0 Demonstrate an understanding of the structure and function of the human body with a focus on the nervous system.
- 18.0 Demonstrate introductory knowledge of computed tomography.
- 19.0 Demonstrate appropriate venipuncture technique.
- 20.0 Demonstrate an understanding of radiographic pathology.
- 21.0 Demonstrate an understanding of how radiation is produced and the characteristics of different classifications of radiation.
- 22.0 Demonstrate an understanding of the structure and function of the human body including the immune system and chemical composition of the body.
- 23.0 Demonstrate an understanding of the integral aspects of radiation biology required of a radiographer.
- 24.0 Convey the importance for proper radiation protection and the precautions radiographers should take to prevent unnecessary exposure to themselves and patients.

**Florida Department of Education  
Student Performance Standards**

**Program Title: Radiologic Technology**  
**PSAV Number: W170210**

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**Course Number: RTE0004**  
**Occupational Completion Point: A**  
**Fundamentals of Radiologic Technology – 96 Hours – SOC Code 29-2034**

01.0	Demonstrate a functional knowledge of medical terminology required in radiologic science. – The student will be able to:
01.01	Apply the word-building process for medical terminology.
01.02	Interpret medical abbreviations and symbols.
01.03	Critique orders and requests.
01.04	Define medical imaging and radiation.
01.05	Translate medical terms, abbreviations and symbols into layman’s terms.
02.0	Convey an understanding of the ethics and laws that impact Radiologic Sciences at both the state and federal levels. – The student will be able to:
02.01	Discuss the origins of medical ethics.
02.02	Apply medical/professional ethics in the context of a broader societal ethic.
02.03	Explain the role of ethical behavior in health care delivery.
02.04	Explain concepts of personal honesty, integrity, accountability, competence and compassion as ethical imperatives in health care.
02.05	Identify legal and professional standards and relate each to practice in health professions.
02.06	Identify specific situations and conditions that give rise to ethical dilemmas in health care.
02.07	Explain select concepts embodied in the principles of patients’ rights, the doctrine of informed (patient) consent and other issues related to patients’ rights.
02.08	Explain the legal implications of professional liability, malpractice, professional negligence and other legal doctrines applicable to professional practice.

02.09	Describe the importance of timely, accurate, and comprehensive methods of documentation as a legal and ethical imperative.
02.10	Explore theoretical situations and questions relating to the ethics of health care delivery.
02.11	Explain legal terms, principles, doctrines and laws specific to the radiologic sciences.
02.12	Outline the conditions necessary for a valid malpractice claim in medical imaging.
02.13	Describe institutional and professional liability protection typically available to the radiographer.
02.14	Describe the components and implications of informed consent.
02.15	Identify standards for informed consent and disclosure of protected health information (PHI).
02.16	Describe how consent forms are used relative to specific radiographic procedures.
02.17	Differentiate between civil and criminal liability.
02.18	Define tort and explain the differences between intentional and unintentional torts.
03.0	Demonstrate introductory knowledge of radiologic science and the health care system. – The student will be able to:
03.01	Identify health science professions that participate in the total health care of the patient.
03.02	Identify various settings involved in the delivery of health care.
03.03	Discuss the reimbursement/payment options for health care services.
03.04	Discuss the role and value of a mission statement to the operation of a healthcare institution.
03.05	Describe relationships and interdependencies of departments within a health care institution.
03.06	Discuss the responsibilities and relationships of all personnel in the radiology department.
03.07	Differentiate between quality assurance (QA) and continuous quality improvement (CQI).
03.08	Differentiate between accreditation types.
03.09	Define credentialing, national certification, registration, and state licensure.
03.10	Discuss career opportunities and advancement for the radiographer.
03.11	Identify the benefits of continuing education as related to improved patient care and professional development.
03.12	Describe the types, purpose, and functions of professional organizations (ASRT).

03.13	Identify educational and certifications requirements.
03.14	Identify state and federal regulatory agencies.
04.0	Demonstrate knowledge of and perform patient care procedures required in radiologic sciences. – The student will be able to:
04.01	Identify the responsibilities of the health care facility and members of the health care team.
04.02	List the general responsibilities of the radiographer.
04.03	Describe the practice standards for the radiographer as defined by the ASRT and state licensure.
04.04	Differentiate between culture and ethnicity.
04.05	Explain perceptions of dying and death from the viewpoint of both patient and radiographer.
04.06	Identify methods for determining the correct patient for a given procedure.
04.07	Explain the use of various communication models.
04.08	Explain specific aspects of a radiographic procedure to the patient.
04.09	Demonstrate correct principles of body mechanics applicable to patient care.
04.10	Demonstrate techniques for specific types of patient transfer.
04.11	Demonstrate select procedures to turn patients who have various health conditions.
04.12	Describe immobilization techniques for various types of procedures and patient conditions.
04.13	Describe specific patient safety measures and concerns.
04.14	Explain the purpose, legal considerations and procedures for incident reporting.
04.15	Describe methods to evaluate patient physical status.
04.16	List the information to be collected prior to a patient examination.
04.17	Describe vital signs and lab values used to assess the condition of the patient, including sites for assessment and normal values.
04.18	Define terms related to infection control.
04.19	Describe the importance of standard precautions and isolation procedures, including sources and modes of transmission of infection and disease and institutional control procedures.
04.20	Identify symptoms related to specific emergency situations.

04.21	Describe the institution's emergency medical code system and the role of the student during a medical emergency.
04.22	Explain the age-specific considerations necessary when performing radiographic procedures.
04.23	Describe appropriate procedures for management of various types of trauma situations.
04.24	Describe the symptoms and medical interventions for a patient with a contrast agent reaction.
04.25	Explain the role of the radiographer in patient education.
04.26	Describe the patient preparation for contrast studies.
04.27	Identify specific types of tubes, lines, catheters and collection devices.
04.28	Outline the steps in the operation and maintenance of suction equipment.
04.29	Outline the steps in the operation and maintenance of oxygen equipment and demonstrate proper use.
04.30	Demonstrate competency in basic life support (BLS).
04.31	Describe the steps in performing various mobile procedures.
04.32	Describe the special problems faced in performing procedures on a patient with a tracheotomy and specific tubes, drains and catheters.
04.33	Describe the procedure for producing diagnostic images in the surgical suite.
04.34	Explain the appropriate radiation protection required when performing mobile/surgical radiography.
05.0	Demonstrate an understanding of pharmacology and venipuncture procedures as it relates to radiologic science. – The student will be able to:
05.01	Distinguish between the chemical, generic and trade names of various drugs.
05.02	Describe the pharmacokinetic, pharmacodynamics and pharmacogenetic principles of drugs.
05.03	Explain the uses and impact on the patient of different categories of drugs.
05.04	Define the categories of contrast agents and give specific examples for each category.
05.05	Explain the pharmacology of contrast agents.
05.06	Describe methods and techniques for administering various types of contrast agents.
05.07	Identify and describe the routes of drug administration.

**Course Number: RTE0410**  
**Occupational Completion Point: A**  
**Radiographic Imaging & Exposure I – 96 Hours – SOC Code 29-2034**

06.0	Demonstrate proficiency in the skills, techniques and knowledge required for image analysis. – The student will be able to:
06.01	Discuss the elements of a radiographic image.
06.02	Identify anatomy on radiographic images.
06.03	Apply a problem-solving process used for image analysis.
06.04	Describe an effective image analysis method.
06.05	Describe the role of the radiographer in image analysis.
06.06	Apply the process for evaluating images for adequate image receptor exposure, exposure indicator, contrast/greyscale/spatial resolution, identification markers, and appropriate use of beam restriction.
06.07	Summarize the importance of proper positioning.
06.08	Discuss the impact of patient preparation on the resulting radiographic image.
06.09	Identify common equipment malfunctions that affect image quality, and corrective action.
06.10	Differentiate between technical factor problems, procedural factor problems and equipment malfunctions.
06.11	Critique images for appropriate technical, procedural and pathologic factors, and employ corrective actions if necessary.
06.12	Differentiate images produced by various modalities.
06.13	Apply a process for evaluating images for acceptable limits of distortion, image artifacts, radiation fog, noise, and gross exposure.
07.0	Demonstrate proficiency in the skills, techniques and knowledge required to operate imaging equipment. – The student will be able to:
07.01	Describe potential difference, current and resistance.
07.02	Describe the general components and functions of the tube and filament circuits.
07.03	Compare generators in terms of radiation produced and efficiency.
07.04	Discuss mobile and fixed radiographic equipment in terms of purpose, components, types and applications.
07.05	Demonstrate operation of various types of fixed and mobile radiographic equipment.
07.06	Discuss fixed, fluoroscopy and mobile equipment in terms of purpose, components, types and applications.

07.07	Describe the components and function of automatic exposure control (AEC) devices.
07.08	Demonstrate proper use of AEC devices.
07.09	Describe the components of diagnostic x-ray tubes.
07.10	Explain methods used to extend x-ray tube life.
07.11	Explain image-intensified, flat panel, and pulsed fluoroscopy.
07.12	Indicate the purpose, construction and application of fluoroscopic monitor.
07.13	Differentiate between quality assurance (QA) and quality control (QC).
07.14	List the benefits of a quality control management to the patient and to the department.
07.15	Evaluate the results of standard QC tests.
07.16	Discuss the image appearance and basic principles of operation for equipment used in various imaging modalities.
07.17	Describe continuous quality improvement (CQI).
07.18	Describe the components of the various types of display monitors.
07.19	Compare monitor types (e.g. acquisition, display).
07.20	Discuss quality control (QC) for imaging equipment and accessories.
07.21	Discuss the appropriate use of electronic masking.
07.22	Recognize and compare basic equipment used in various imaging modalities.
08.0	Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including x-ray production, image formation, and factors related to radiographic quality. – The student will be able to:
08.01	Discuss practical considerations in setting standards for acceptable image quality.
08.02	Assess radiographic exposure on radiographic images.
08.03	Analyze the relationships of factors that control and affect image exposure.
08.04	Critique the radiographic contrast within various radiographic images.
08.05	Analyze the relationship of factors that control and affect radiographic contrast.
08.06	Critique spatial resolution on various radiographic images.



08.07	Analyze the relationships of factors that control and affect spatial resolution.
08.08	Differentiate between size and shape distortion.
08.09	Perform calculations to determine image magnification and percent magnification.
08.10	Summarize the relationship of factors that control and affect distortion.
08.11	Explain the rationale for using beam restriction devices.
08.12	Describe the operation and applications for different types of beam restriction.
08.13	Explain how beam filtration affects x-ray beam intensity, beam quality and patient exposure.
08.14	Describe the change in the half-value layer (HVL) when filtration is added or removed.
08.15	Describe the impact of sampling frequency on spatial resolution.
08.16	Define sampling frequency.
08.17	Describe the impact of detector element size on spatial resolution.
08.18	Describe the Nyquist-Shannon theorem as it relates to sampling frequency.
08.19	Describe the process of image stitching.

**Course Number: RTE0505**  
**Occupational Completion Point: A**  
**Radiographic Procedures I - 96 Hours – SOC Code 29-2034**

09.0	Demonstrate an understanding of the structure and function of the human body with a focus on the muscular, endocrine, respiratory, urinary and appendicular skeletal systems. – The student will be able to:
09.01	Discuss the basics of anatomical nomenclature.
09.02	Classify tissue types, describe the functional characteristics of each and give examples of their location within the human body.
09.03	Describe the composition and characteristics of bone.
09.04	Identify and locate the bones of the human skeleton.
09.05	Identify bony processes and depressions found on the human skeleton.
09.06	Summarize the functions of the skeletal system.
09.07	Label different types of articulations.

09.08	Compare the types, locations and movements permitted by the different types of articulations.
09.09	Examine how muscle is organized at the gross and microscopic levels.
09.10	Differentiate between the structures of each type of muscle tissue.
09.11	State the function of each type of muscle tissue.
09.12	Name and locate the major muscles of the skeleton.
09.13	Define endocrine.
09.14	Describe the characteristics and functions of the components that comprise the endocrine system.
09.15	Differentiate between peritoneum, omentum and mesentery.
09.16	Label the components of the respiratory system.
09.17	Describe the physiology and regulation of respiration.
09.18	Label the parts of the kidneys, ureters, bladder and urethra.
09.19	Describe the function of each organ of the urinary system.
09.20	Describe the composition and formation of urine.
09.21	Explain micturition.
09.22	Identify major sectional anatomical structures found within the head and neck, thorax and abdomen.
10.0	Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate radiographic procedures. – The student will be able to:
10.01	Describe standard positioning terms.
10.02	Demonstrate proper use of positioning aids.
10.03	Discuss general procedural considerations for radiographic exams.
10.04	Identify methods and barriers of communication and describe how each may be used or overcome effectively during patient education.
10.05	Explain radiographic procedures to patients/family members.
10.06	Modify directions to patients with various communication problems.
10.07	Develop an awareness of cultural factors that necessitate adapting standard exam protocols.

10.08	Adapt general procedural considerations to specific clinical settings.
10.09	Identify the structures demonstrated on routine radiographic images.
10.10	Adapt radiographic procedures for special considerations.
10.11	Simulate radiographic procedures on a person or phantom in a laboratory or clinical setting.
10.12	Evaluate images for positioning, centering, appropriate anatomy and overall image quality.
10.13	Discuss equipment and supplies necessary to complete basic radiographic procedures.
10.14	Explain the routine and special positions and projections for all radiographic procedures.
10.15	Describe the general purpose of radiographic studies.
10.16	Apply general radiation safety and protection practices associated with radiographic examinations.
10.17	Define region of interest (ROI).
10.18	Define basic terms related to indications and contraindications related to imaging studies.

**Course Number: RTE0809**

**Occupational Completion Point: A**

**Clinical Education I – 312 Hours – SOC Code 29-2034**

*Clinical Education I* provides a foundational practicum in which students are expected to apply skills learned in *Fundamentals of Radiologic Technology* and *Radiographic Procedures I*. The course objectives in *Clinical Education I* repeat in subsequent practicums of clinical education due to the progressive approach to student competency and proficiency. This course is a necessary prerequisite for advancing to *Clinical Education II*.

The content and clinical practice experiences within the course of *Clinical Education I* are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential and competency-based clinical assignments, students will adopt and apply concepts of team practice, radiation protection, and become skillful in patient-centered clinical practice while developing professional expertise and conduct that are discussed, examined and evaluated.

*Clinical Education I* provides students with practical experiences in patient care and assessment, fosters competent performance of radiologic imaging and impacts total quality management standards. Levels of competency and performance outcomes are measured at six-week intervals. This is designed to ensure the well-being of patients before, during and after performance of radiologic procedures. The evaluative measurement tools provide a mechanism that ensures progression of student competency and proficiency.

11.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice. – The student will be able to:

11.01	Exercise the priorities required in daily clinical practice.
11.02	Execute medical imaging procedures under the appropriate level of supervision.
11.03	Adhere to team practice concepts that focus on organizational theories, roles of team members and conflict resolution.
11.04	Adapt to changes and varying clinical situations.
11.05	Describe the role of health care team members in responding/reacting to a local or national emergency.
11.06	Provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.
11.07	Integrate the use of appropriate and effective written, oral and nonverbal communication with patients, the public and members of the health care team in the clinical setting.
11.08	Integrate appropriate personal and professional values into clinical practice.
11.09	Recognize the influence of professional values on patient care.
11.10	Explain how a person's cultural beliefs toward illness and health affect his or her health status.
11.11	Use patient and family education strategies appropriate to the comprehension level of the patient/family.
11.12	Provide desired psychosocial support to the patient and family.
11.13	Demonstrate competent assessment skills through effective management of the patient's physical and mental status.
11.14	Respond appropriately to medical emergencies.
11.15	Examine demographic factors that influence patient compliance with medical care.
11.16	Adapt procedures to meet age-specific, disease-specific and cultural needs of patients.
11.17	Assess the patient and record clinical history.
11.18	Demonstrate basic life support procedures.
11.19	Use appropriate charting/electronic documentation methods.
11.20	Recognize life-threatening electrocardiogram (ECG) tracing.
11.21	Apply standard and transmission-based precautions.
11.22	Apply the appropriate medical asepsis and sterile technique.
11.23	Demonstrate competency in the principles of radiation protection standards.

11.24	Apply the principles of total quality management.
11.25	Report equipment malfunctions.
11.26	Examine procedure orders for accuracy and make corrective actions when applicable.
11.27	Demonstrate safe, ethical and legal practices.
11.28	Integrate the radiographer's practice standards into clinical practice setting.
11.29	Maintain patient confidentiality standards and meet HIPAA requirements.
11.30	Demonstrate the principles of transferring, positioning and immobilizing patients.
11.31	Comply with departmental and institutional response to emergencies, disasters and accidents.
11.32	Differentiate between emergency and non-emergency procedures.
11.33	Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors.
11.34	Select technical factors to produce quality diagnostic images with the lowest radiation exposure possible.
11.35	Critique images for appropriate anatomy, image quality and patient identification.
11.36	Determine corrective measures to improve inadequate images.

**Course Number: RTE0450**  
**Occupational Completion Point: B**  
**Radiographic Imaging & Exposure II - 90 Hours – SOC Code 29-2034**

12.0	Convey an understanding of the principles of imaging and the various factors that contribute to accuracy including image acquisition and processing, scatter radiation control, and image evaluation. – The student will be able to:
12.01	Summarize the relationship of factors affecting scattered radiation.
12.02	Evaluate the effects of scattered radiation on the image.
12.03	Compare grid types.
12.04	Select the most appropriate grid for a given clinical situation.
12.05	Interpret grid efficiency in terms of grid ratio and frequency.
12.06	Summarize the factors that influence grid cutoff.

12.07	Evaluate grid artifacts.
12.08	Explain the use of radiographic technique charts.
12.09	Explain exposure factor considerations involved in selecting techniques.
12.10	Compare fixed kilovoltage peak (kVp) and variable kVp systems.
12.11	Apply the reciprocity law to clinical situations.
12.12	Apply conversion factors for changes in the following areas: distance, grid, image receptors, reciprocity law and 15 percent rule.
13.0	Demonstrate an understanding of the concepts and equipment required of digital image acquisition and display. – The student will be able to:
13.01	Define terminology associated with digital imaging systems.
13.02	Describe the various types of digital receptors.
13.03	Describe the response of digital detectors to exposure variations.
13.04	Compare the advantages and limits of each receptor type.
13.05	Evaluate the spatial resolution of a digital imaging system.
13.06	Describe the histogram and the process or histogram analysis as it relates to automatic rescaling and determining an exposure indicator.
13.07	Relate the receptor exposure indicator values to technical factors, system calibration, part/beam/plate alignment and patient exposure.
13.08	Describe the response of PSP systems to background and scatter radiation.
13.09	Use appropriate means of scatter control.
13.10	Avoid grid use errors associated with grid cutoff and Moiré effect.
13.11	Identify common limitations and technical problems encountered when using PSP systems.
13.12	Employ appropriate beam/part/receptor alignment to avoid histogram analysis errors.
13.13	Associate impact of image processing parameters to the image appearance.
13.14	Apply the fundamental principles of radiographic exposure to digital detectors.
13.15	Evaluate the effect of a given exposure change on histogram shape, data width and image appearance.
13.16	Describe the conditions that cause quantum mottle in a digital image.

13.17	Formulate a procedure or process to minimize histogram analysis and rescaling errors.
13.18	Examine the potential impact of digital radiographic systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
13.19	Describe picture archival and communications system (PACS) and its function.
13.20	Identify components of a PACS.
13.21	Define digital imaging and communications in medicine (DICOM).
13.22	Describe HIPAA concerns with electronic information.
13.23	Identify common problems associated with retrieving/viewing images within a PACS.
13.24	Describe the calculation of the exposure indicator (AAPM Task Group 116).
13.25	Relate how the values of interest (VOI) impact image appearance.
13.26	Describe signal to noise (SNR) as it relates to digital radiography detectors.
13.27	Describe modulation transfer function (MTF) as it relates to digital radiography detectors.
13.28	Describe contrast to noise (CNR) as it relates to digital radiography detectors.
13.29	Describe detective quantum efficiency (DQE) for digital radiography detectors.
13.30	Describe display monitor aspect ratio and its impact on image display
13.31	Identify critical components of the DICOM header.
13.32	Relate the location and size of the ROI to the appearance of the image and exposure indicator
13.33	Discuss the impact of viewing angle, luminance, ambient lighting, and pixel size on image display.

**Course Number: RTE0506**

**Occupational Completion Point: B**

**Radiographic Procedures II – 90 Hours – SOC Code 29-2034**

Radiologic Procedures II is a continuation of Radiologic Procedures I and builds on the skills and knowledge obtained in that course. In addition to the course objectives included below in Radiologic Procedures II, standards are also repeated from Radiologic Procedures I due to the progressive approach to student competency and proficiency.

14.0 Demonstrate an understanding of the structure and function of the human body with a focus on the axial skeletal system. – The student will be able to:

14.01	Describe articulations of the axial skeleton.
14.02	Differentiate the primary and secondary curves of the spine.
14.03	Identify and locate the bones of the human axial skeleton.
14.04	Identify bony processes and depressions found on the human axial skeleton.
14.05	Summarize the functions of the axial skeletal system.
14.06	Label different types of articulations specific to the axial skeletal system.

**Course Number: RTE0507**  
**Occupational Completion Point: B**  
**Radiographic Procedures III – 66 Hours – SOC Code 29-2034**

Radiologic Procedures III is a continuation of Radiologic Procedures I and Radiologic Procedures II and builds on the skills and knowledge obtained in that course. In addition to the course objectives included below in Radiologic Procedures III, standards are also repeated from Radiologic Procedures I and Radiologic Procedures II due to the progressive approach to student competency and proficiency.

15.0	Demonstrate an understanding of the structure and function of the human body with a focus on the circulatory/cardiovascular, digestive and reproductive systems. – The student will be able to:
15.01	Describe the composition and characteristics of blood.
15.02	List the types of blood cells and state their functions.
15.03	Differentiate between blood plasma and serum.
15.04	Outline the clotting mechanism.
15.05	List the blood types.
15.06	Explain the term Rh factor.
15.07	Explain the antigen/antibody relationship and its use in blood typing.
15.08	Label the parts of the human heart.
15.09	Describe the flow of blood through the body and identify the main vessels.
15.10	Describe the structure and function of arteries, veins and capillaries.
15.11	Differentiate between arterial blood in systemic circulation and arterial blood in pulmonary circulation.
15.12	Outline the major pathways of lymphatic circulation.



15.13	Correlate cardiac electrophysiology to a normal ECG tracing.
15.14	Label the anatomy of the male and female reproductive organs.
15.15	Analyze the function of each of the male and female reproductive organs.
15.16	Describe the structures and functions of the components that comprise the human eye and ear.
15.17	List the component body parts involved in the senses of smell and taste.
15.18	List the somatic senses.
15.19	Describe the hard and soft palates.
15.20	Describe the structure and function of the tongue.
15.21	Identify the structure, function and locations of the salivary glands.
15.22	List and label the accessory organs of the digestive system and describe their function.
15.23	Describe the composition and characteristics of the primary organs of the digestive system.
15.24	Describe the function(s) of each primary organ of the digestive system.
15.25	Differentiate between the layers of tissue that comprise the esophagus, stomach, small intestine, large intestine and rectum.
15.26	Identify the secretions and function of each accessory organ of the digestive system.
15.27	Explain the purpose of digestion.
15.28	List the digestive processes that occur in the body.
16.0	Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate fluoroscopic procedures. – The student will be able to:
16.01	Identify the structures demonstrated on routine fluoroscopic images.
16.02	Adapt fluoroscopic procedures for special considerations.
16.03	Simulate fluoroscopic procedures on a person or phantom in a laboratory setting.
16.04	Evaluate images for positioning, centering, appropriate anatomy and overall image quality.
16.05	Discuss equipment and supplies necessary to complete basic fluoroscopic procedures.
16.06	Explain the patient preparation necessary for various contrast and special studies.

16.07	Explain the routine and special positions/projections for all fluoroscopic procedures.
16.08	Explain the purpose for using contrast media.
16.09	Name the type, dosage and route of administration of contrast media commonly used to perform radiographic contrast and special studies.
16.10	Describe the general purpose of fluoroscopic studies.
16.11	Apply general radiation safety and protection practices associated with fluoroscopic examinations.

**Course Number: RTE0819**  
**Occupational Completion Point: B**  
**Clinical Education II – 504 Hours – SOC Code 29-2034**

*Clinical Education II* provides a progressive practicum in sequence to *Clinical Education I* in which students are expected to apply skills learned in *Fundamentals of Radiologic Technology, Radiographic Procedures I, Radiographic Procedures II, and Clinical Education I*. The course objectives in *Clinical Education II* are repeated from *Clinical Education I* due to the progressive approach to student competency and proficiency. This course is a necessary prerequisite for advancing to *Clinical Education III*.

The content and clinical practice experiences within the course of *Clinical Education II* are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential and competency-based clinical assignments, students will adopt and apply concepts of team practice, radiation protection, and become skillful in patient-centered clinical practice while developing professional expertise and conduct that are discussed, examined and evaluated. *Clinical Education II* provides students with practical experiences in patient care and assessment, fosters competent performance of radiologic imaging and impacts total quality management standards. Levels of competency and performance outcomes are measured at six-week intervals. This is designed to ensure the well-being of patients before, during and after performance of radiologic procedures. The evaluative measurement tools provide a mechanism that ensures progression of student competency and proficiency.

**Course Number: RTE0015**  
**Occupational Completion Point: C**  
**Advanced Modality Imaging – 54 Hours – SOC Code 29-2034**

17.0	Demonstrate an understanding of the structure and function of the human body with a focus on the nervous system. – The student will be able to:
17.01	Differentiate between the structure and function of different types of nerve cells.
17.02	State the structure of the brain and the relationship of its component parts.
17.03	Describe brain functions.
17.04	List the meninges and describe the function of each.

17.05	Outline how cerebrospinal fluid forms, circulates and functions.
17.06	Describe the structure and function of the spinal cord.
17.07	Determine the distribution and function of cranial and spinal nerves.
17.08	Summarize the structure and function of components that comprise the autonomic nervous system.
18.0	Demonstrate introductory knowledge of computed tomography. – The student will be able to:
18.01	Explain the difference between reconstructing and reformatting an image.
18.02	Cite the structures demonstrated on commonly performed CT images.
18.03	Describe commonly performed CT procedures.
18.04	Evaluate images for positioning, centering, appropriate anatomy and overall image quality
18.05	Discuss equipment and supplies necessary to complete commonly performed CT procedures.
18.06	Explain the CT acquisition protocol for commonly performed head/neck, thorax, and abdomen procedures.
18.07	Explain the patient preparation necessary for commonly performed CT contrast studies.
18.08	Name the type, dosage purpose, and route of contrast administration for common CT procedures.
18.09	Describe the components of the CT imaging system.
18.10	Explain the functions of collimators in CT.
18.11	List the CT computer data processing steps.
18.12	Define algorithm and explain its impact on image scan factors and reconstruction.
18.13	Define raw data and image data.
18.14	Describe the following terms in relation to the CT data acquisition process: <ul style="list-style-type: none"> <li>a. Pixel.</li> <li>b. Matrix.</li> <li>c. Voxel.</li> <li>d. Linear attenuation coefficient.</li> <li>e. CT/Hounsfield number.</li> <li>f. Partial volume averaging.</li> <li>g. Window width (ww) and window level (wl).</li> <li>h. Spatial resolution.</li> <li>i. Contrast resolution.</li> </ul>

	<ul style="list-style-type: none"> <li>j. Noise.</li> <li>k. Annotation.</li> <li>l. Region of interest (ROI).</li> </ul>
18.15	Name the common controls found on CT operator consoles and describe how and why each is used.
18.16	Identify the types and appearance of artifacts most commonly affecting CT images.
18.17	Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.
18.18	Describe the general purpose of commonly performed CT studies.
18.19	Discuss general radiation safety and protection practices associated with examinations in CT.
19.0	Demonstrate appropriate venipuncture technique. – The student will be able to:
19.01	Differentiate between the two major sites of intravenous drug administration.
19.02	Identify, describe and document complications associated with venipuncture and appropriate actions to resolve these complications.
19.03	Discuss the various elements of initiating and discontinuing intravenous access.
19.04	Differentiate and document dose calculations for adult and pediatric patients.
19.05	Prepare for injection of contrast agents/intravenous medications using aseptic technique.
19.06	Explain the current legal status and professional liability issues of the radiographer's role in contrast and/or drug administration.
19.07	Simulate appropriate venipuncture technique.

<b>Course Number RTE0780</b> <b>Occupational Completion Point: C</b> <b>Radiographic Pathology &amp; Directed Research – 86 Hours – SOC Code 29-2034</b>	
20.0	Demonstrate an understanding of radiographic pathology. – The student will be able to:
20.01	Define basic terms related to pathology.
20.02	Describe the basic manifestations of pathological conditions and their relevance to radiologic procedures.
20.03	Discuss the classifications of trauma.
20.04	Describe imaging procedures used in diagnosing disease.
20.05	List the causes of tissue disruption.

20.06	Describe the healing process.
20.07	Identify complications connected with the repair and replacement of tissue.
20.08	Describe the various systemic classifications of disease in terms of etiology, types, common sites, complications and prognosis.
20.09	Describe the radiographic appearance of diseases.
20.10	Identify imaging procedures and interventional techniques appropriate for diseases common to each body system.
20.11	Identify diseases caused by or connected to genetic factors.

**Course Number: RTE0610**  
**Occupational Completion Point: C**  
**Radiation Physics – 86 Hours – SOC Code 29-2034**

21.0	Demonstrate an understanding of how radiation is produced and the characteristics of different classifications of radiation. – The student will be able to:
21.01	Describe fundamental atomic structure.
21.02	Describe the electromagnetic spectrum.
21.03	Describe wavelength and frequency and how they are related to velocity.
21.04	Explain the relationship of energy, wavelength and frequency.
21.05	Explain the wave-particle duality phenomena.
21.06	Identify the properties of x-rays.
21.07	Describe the processes of ionization and excitation.
21.08	Describe particulate radiation.
21.09	Differentiate between ionizing and nonionizing radiation.
21.10	Describe radioactivity and radioactive decay in terms of alpha, beta and gamma emission.
21.11	Compare the production of bremsstrahlung and characteristic radiations.
21.12	Describe the conditions necessary to produce x-radiation.
21.13	Describe the x-ray emission spectrum.
21.14	Explain the factors that affect the x-ray emission spectrum.

21.15 Discuss various photon interactions with matter.

21.16 Discuss relationships of wavelength and frequency to beam characteristics.

21.17 Discuss the clinical significance of the photoelectric and modified scattering (Compton) interactions in diagnostic imaging.

21.18 Compare and contrast different types of radiation.

**Course Number: RTE0829**

**Occupational Completion Point: C**

**Clinical Education III – 220 Hours – SOC Code 29-2034**

*Clinical Education III* provides a progressive practicum in sequence to *Clinical Education II* in which students are expected to apply skills learned in *Fundamentals of Radiologic Technology, Radiographic Procedures I, Radiographic Procedures II, Radiographic Procedures III* and all previously sequenced Clinical Education courses. The course objectives in *Clinical Education III* are repeated from *Clinical Education I* due to the progressive approach to student competency and proficiency. This course is a necessary prerequisite for advancing to *Clinical Education IV*.

The content and clinical practice experiences within the course of *Clinical Education III* are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential and competency-based clinical assignments, students will adopt and apply concepts of team practice, radiation protection, and become skillful in patient-centered clinical practice while developing professional expertise and conduct that are discussed, examined and evaluated.

*Clinical Education III* provides students with practical experiences in patient care and assessment, fosters competent performance of radiologic imaging and impacts total quality management standards. Levels of competency and performance outcomes are measured at six-week intervals. This is designed to ensure the well-being of patients before, during and after performance of radiologic procedures. The evaluative measurement tools provide a mechanism that ensures progression of student competency and proficiency.

**Course Number RTE0839**

**Occupational Completion Point: C**

**Advanced Clinical Education IV – 340 Hours – SOC Code 29-2034**

*Advanced Clinical Education IV* provides an advanced progressive practicum in sequence to *Clinical Education III* in which students are expected to apply skills learned in *Fundamentals of Radiologic Technology, Radiographic Procedures I, II and III, Radiographic Imaging I and II*, and all previously sequenced Clinical Education courses. The course objectives in *Clinical Education IV* are repeated from *Clinical Education I* due to the progressive approach to student competency and proficiency. This course is a necessary prerequisite for advancing to *Clinical Education V*.

The content and clinical practice experiences within the course of *Advanced Clinical Education IV* are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential and advanced competency-based clinical assignments, students will consistently demonstrate concepts of team practice; proficiency of skills in patient-centered clinical practice and radiation protection; and professional expertise and conduct that are discussed, examined and evaluated.

*Advanced Clinical Education IV* provides students with advanced practical experiences in patient care and assessment, fosters competent performance of radiologic imaging and impacts total quality management standards. *Advanced Clinical IV* includes practice in venipuncture skills and shadowing in advanced modality imaging. Levels of competency and performance outcomes are measured at six-week intervals. This is designed to ensure the well-being of patients before, during and after performance of radiologic procedures. The evaluative measurement tools provide a mechanism that ensures progression of student competency and proficiency.

**Course Number: RTE0380**

**Occupational Completion Point: C**

**Radiation Biology & Radiation Protection – 51 Hours – SOC Code 29-2034**

22.0 Demonstrate an understanding of the structure and function of the human body including the immune system and chemical composition of the body. – The student will be able to:

22.01 Describe the chemical composition of the human body.

22.02 Identify cell structure and elements of genetic control.

22.03 Explain the essentials of human metabolism.

22.04 Differentiate between nonspecific defenses and specific immunity.

22.05 Explain antibody production and function.

22.06 List the different types and functions of T- and B-cells and explain their functions.

23.0 Demonstrate an understanding of the integral aspects of radiation biology required of a radiographer. – The student will be able to:

23.01 Differentiate between ionic and covalent molecular bonds.

23.02 Describe principles of cellular biology.

23.03 Identify sources of electromagnetic and particulate ionizing radiations.

23.04 Discriminate between the direct and indirect effects of radiation.

23.05 Identify sources of radiation exposure.

23.06 Describe radiation-induced chemical reactions and potential biologic damage.

23.07 Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.

23.08 Identify methods to measure radiation response.

23.09 Describe physical, chemical and biologic factors influencing radiation response of cells and tissues.

23.10	Explain factors influencing radiosensitivity.
23.11	Recognize the clinical significance of lethal dose (LD).
23.12	Identify the radiosensitivity and radioresistency of specific cells.
23.13	Employ dose response curves to study the relationship between radiation dose levels and the degree of biologic response.
23.14	Examine effects of limited vs. total body exposure.
23.15	Relate short-term and long-term effects as a consequence of high and low radiation doses.
23.16	Differentiate between somatic and genetic radiation effects and discuss specific diseases or syndromes associated with them.
23.17	Discuss stochastic and deterministic effects.
23.18	Discuss embryonic and fetal effects of radiation exposure.
23.19	Discuss risk estimates for radiation-induced malignancies.
23.20	Discuss acute radiation syndromes.
23.21	Define basic terms related to dose differences.
24.0	Convey the importance for proper radiation protection and the precautions radiographers should take to prevent unnecessary exposure to themselves and patients. – The student will be able to:
24.01	Identify and justify the need to minimize unnecessary radiation exposure of humans.
24.02	Explain the objectives of a radiation protection program.
24.03	Define radiation and radioactivity units of measurement.
24.04	Identify effective dose limits (EDL) for occupational and nonoccupational radiation exposure.
24.05	Describe the ALARA concept.
24.06	Identify the basis for occupational exposure limits.
24.07	Distinguish between perceived risk and comparable risk.
24.08	Describe the concept of the negligible individual dose (NID).
24.09	Identify ionizing radiation sources from natural and man-made sources.
24.10	Comply with legal and ethical radiation protection responsibilities of radiation workers.



24.11	Describe the relationship between irradiated area and effective dose.
24.12	Describe the theory and operation of radiation detection devices.
24.13	Identify appropriate applications and limitations for each radiation detection device.
24.14	Describe how isoexposure curves are used for radiation protection.
24.15	Identify performance standards for beam-limiting devices.
24.16	Describe procedures used to verify performance standards for equipment.
24.17	Describe the operation of various interlocking systems for equipment.
24.18	Identify conditions and locations evaluated in an area survey for radiation protection.
24.19	Distinguish between controlled and non-controlled areas and list acceptable exposure levels.
24.20	Describe "Radiation Area" signs and identify appropriate placement sites.
24.21	Describe the function of federal, state and local regulations governing radiation protection practices.
24.22	Describe the qualifications and responsibilities of a radiation safety officer.
24.23	Express the need and importance of personnel monitoring for radiation workers.
24.24	Describe personnel monitoring devices, including applications, advantages and limitations for each device.
24.25	Interpret personnel monitoring reports.
24.26	Compare values for individual effective dose limits for occupational radiation exposures (annual and lifetime).
24.27	Identify effective dose limits for the embryo and fetus in occupationally exposed women.
24.28	Distinguish between primary and secondary radiation barriers.
24.29	Demonstrate how the operation of various x-ray and ancillary equipment influences radiation safety and describe the potential consequences of equipment failure.
24.30	Perform calculations of exposure with varying time, distance and shielding.
24.31	Discuss the relationship between workload, energy, half-value layer (HVL), tenth-value layer (TVL), use factor and shielding design.
24.32	Identify emergency procedures to be followed during failures of x-ray equipment.
24.33	Demonstrate how time, distance and shielding can be manipulated to keep radiation exposures to a minimum.

24.34	Explain the relationship of beam-limiting devices to patient radiation protection.
24.35	Discuss added and inherent filtration in terms of the effect on patient dosage.
24.36	Explain the purpose and importance of patient shielding.
24.37	Identify various types of patient shielding and state the advantages and disadvantages of each type.
24.38	Use the appropriate method of shielding for a given radiographic or fluoroscopic procedure.
24.39	Explain the relationship of exposure factors to patient dosage.
24.40	Explain how patient position affects dose to radiosensitive organs.
24.41	Identify the appropriate image receptor that will result in an optimum diagnostic image with the minimum radiation exposure to the patient.
24.42	Select the immobilization techniques used to eliminate voluntary motion.
24.43	Describe the minimum source-to-tabletop distances for fixed and mobile fluoroscopic devices.
24.44	Apply safety factors for the patient, health care personnel and family members in the room during radiographic/fluoroscopic procedures.

**Course Number: RTE0939**  
**Occupational Completion Point: C**  
**Radiography Seminar – 153 Hours – SOC Code 29-2034**

*Radiography Seminar* provides the student a systematic approach to integrating, synthesizing, and evaluating program content knowledge to ensure adequate preparation for meeting the requirements for licensure in radiologic technology. This course provides evaluative assessment tools that aid the student in conveying and demonstrating mastery of the course objectives from all program content:

- Convey an understanding of the ethics and laws that impact radiologic sciences at both the state and federal levels.
- Demonstrate knowledge of radiologic science as it pertains to the healthcare system.
- Demonstrate a functional knowledge of medical terminology required in radiologic sciences.
- Demonstrate knowledge of patient care procedures required in radiologic sciences.
- Convey an understanding of pharmacology and venipuncture procedures as it relates to radiologic sciences.
- Demonstrate proficiency in the skills, techniques and knowledge required for image analysis.
- Demonstrate proficiency in the skills, techniques and knowledge required to operate imaging equipment.
- Convey an understanding of the principles of imaging and the various factors that contribute to accuracy.
- Convey an understanding of the structure and function of the human body.
- Demonstrate proficiency in the skills, techniques and knowledge required to perform accurate radiographic procedures.
- Convey an understanding of the concepts and equipment required of digital image acquisition and display.
- Convey an understanding of how radiation is produced and the characteristics of different classifications of radiation.
- Convey an understanding of radiographic pathology.

- Convey an understanding of the integral aspects of radiation biology required of a radiographer.
- Convey an understanding of the importance for proper radiation protection and the precautions radiographers should take to prevent unnecessary exposure to themselves and patients.

**Course Number: RTE0849**

**Occupational Completion Point: C**

**Advanced Clinical Education V – 360 Hours – SOC Code 29-2034**

*Advanced Clinical Education V* provides an advanced progressive practicum in sequence to *Advanced Clinical Education IV* in which students are expected to apply skills learned in *Fundamentals of Radiologic Technology, Radiographic Procedures I, II and III, Radiographic Imaging I and II*, and all previously sequenced Clinical Education courses. The course objectives in *Advanced Clinical Education V* are repeated from *Clinical Education I* due to the progressive approach to student competency and proficiency.

The content and clinical practice experiences within the course of *Advanced Clinical Education V* are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential and advanced competency-based clinical assignments, students will consistently demonstrate concepts of team practice; proficiency of skills in patient-centered clinical practice and radiation protection; and professional expertise and conduct that are discussed, examined and evaluated.

*Advanced Clinical Education V* provides students with advanced practical experiences in patient care and assessment, fosters competent performance of radiologic imaging and impacts total quality management standards. *Advanced Clinical V* includes practice in venipuncture skills and shadowing in advanced modality imaging. Levels of competency and performance outcomes are measured at six-week intervals. This is designed to ensure the well-being of patients before, during and after performance of radiologic procedures. The evaluative measurement tools provide a mechanism that ensures that program standards of student competency and proficiency have been met.

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## **Additional Information**

### **Laboratory Activities**

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

### **Special Notes**

If students in this program are seeking a licensure, certificate or registration through the Department of Health, please refer to 456.0635 F.S. for more information on disqualification for a license, certificate, or registration through the Department of Health.

The program must be accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300, or any other appropriate accrediting agency acceptable to the American Registry of Radiologic Technologists (ARRT).

The program must also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a Certified Radiologic Technologist. As specified in Chapter 468 Part IV F.S. and Chapter 64E-3 F.A.C.

Radiographers provide patient services using imaging modalities, as directed by physicians qualified to order and/or perform radiologic procedures. Radiographers usually provide patient care essential to radiologic procedures, including exercising judgment when performing medical imaging procedures. When providing patient services, the radiographer adheres to the principles of radiation protection for the patient, self, and others.

Radiographers accurately demonstrate anatomical structures on various imaging receptors by knowledge of anatomy, positioning, radiographic technique, and radiation protection. Radiographers must also be able to recognize emergency patient conditions and initiate lifesaving first aid. Additional duties may include performing quality assurance, processing film, and keeping patient records. Radiographers may be required to perform some of these duties at the patient's bedside or in the operating room.

The policies and process by which students receive clinical education shall be published and made known to all concerned in order to avoid practices in which students are substituted for paid staff. Students shall not take the responsibility or the place of qualified staff. After demonstrating competency, students may be permitted to perform procedures with indirect supervision. Unsatisfactory radiographs shall be repeated only in the presence of a qualified radiographer.

Program completers will be eligible to make an application to take the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)  
1255 Northland Drive  
St. Paul, MN 55120-1155  
(612) 687-0048

Students are encouraged to become members of their appropriate professional organizations such as the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

### **Career and Technical Student Organization (CTSO)**

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

### **Cooperative Training – OJT**

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

### **Basic Skills**

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 11, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3) (a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

## **Accommodations**

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.