

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

<b>CTE Standards and Benchmarks</b>	
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.

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 consisting of one course.

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)

### **Academic Alignment Tables**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Course	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8400320	**	**	**	**	**	**	**	**	**	**	**

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Course	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8400320	18/67 27%	10/75 13%	16/54 30%	21/46 46%	21/45 47%	#	#

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**



**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.

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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 basic communication skills.
- 02.0 Perform basic mathematics skills used in health care.
- 03.0 Describe the services provided by health occupations career clusters.
- 04.0 Demonstrate basic health skills.
- 05.0 Demonstrate first aid, CPR and BLS
- 06.0 Discuss legal aspects for the health consumer.
- 07.0 Discuss the factors that affect whole body wellness.
- 08.0 Identify the needs of the terminally ill.
- 09.0 Demonstrate knowledge of blood borne diseases, including AIDS.
- 10.0 Relate the use of computers in the health care field.
- 11.0 Demonstrate employability skills.

Florida Department of Education  
Student Performance Standards

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

**Abbreviations:**

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

*Note: This course is pending alignment in the following categories: NGSSS-Sci.*

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
01.0 Perform basic communication skills. – The student will be able to:		
01.01 Demonstrate examples of verbal and non-verbal communication.		
01.02 Demonstrate active listening skills.		
01.03 Demonstrate ability to follow written and oral directions.	LAFS.910.RI.1.2	
01.04 Discuss the difference between constructive and non-constructive criticism.	LAFS.910.RI.2.6 LAFS.910.RI.3.8	
01.05 Define, pronounce and spell common medical terms and abbreviations necessary to safely carry out medical instructions.	LAFS.910.L.3.4c,d LAFS.910.L.2.3	
02.0 Perform 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.	MAFS.912.N-Q.1.3	
02.02 Convert common weights, measures and volumes to metric.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
02.03 Convert from regular to 24-hour clock time.		
02.04 Perform basic addition, subtraction, multiplication, and division used in healthcare.		
03.0 Describe the services provided by health occupations career clusters. – The student will be able to:		
03.01 Discuss the history of health care services.	LAFS.910.RI.1.1 LAFS.910.SL.1.1a,d	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.W.2.4	
03.02 Identify the basic components of the health care delivery system.		
03.03 List 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	LAFS.910.SL.2.6 LAFS.910.L.1.1 LAFS.910.L.1.2 LAFS.910.W.2.6	
03.03.05 Biotechnology Research and Development		
03.04 Demonstrate Vision Screening.		
03.05 Demonstrate ability to test for hearing using simple tools.		
03.06 Demonstrate ability to test reflexes.		
04.0 Demonstrate basic health skills. – The student will be able to:		
04.01 Perform proper handwashing technique.		
04.02 Demonstrate proper application and disposal of Personal Protective Equipment (gloves, gown, mask, goggles)		
04.03 Demonstrate the use of basic body mechanics technique.		
04.04 Demonstrate how to prevent accidents, injuries and infection in accordance with OSHA standards.		
04.05 Demonstrate fire safety in medical facilities including RACE and PASS procedures.		
04.06 Recognize the parts of the chain of infection and how to break it.		
04.07 Demonstrate and record vital signs.	MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
05.0 Demonstrate first aid, CPR, and BLS. – The student will be able to:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
05.01 Describe wounds and the appropriate first aid treatment.	LAFS.910.W.2.4 LAFS.910.SL.2.4 LAFS.910.RI.1.1	
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.	LAFS.910.W.2.4 LAFS.910.SL.3.4 LAFS.910.RI.1.1	
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.	LAFS.910.W.2.4 LAFS.910.SL.2.4 LAFS.910.RI.1.1	
05.09 Perform skills in BLS.		
05.10 Describe first aid for choking.		
05.11 Determine the priority of care in an emergency situation.	LAFS.910.SL.2.6	
05.12 Demonstrate activation of the Emergency Medical System (EMS).	LAFS.910.SL.2.6	
06.0 Discuss legal aspects for the health consumer. – The student will be able to:		
06.01 Explain how the "Good Samaritan" Law protects the first responder in emergency situations.	LAFS.910.RI.3.9 LAFS.910.W.1.2 LAFS.910.SL.1.1c	
06.02 Define advanced directives and health care surrogate.		
06.03 Discuss legal procedures for donating organs.	LAFS.910.SL.1.1c	
06.04 Discuss the need for health insurance and the different types available (Affordable Care Act, Medicaid, Medicare, and private insurance).	LAFS.910.SL.1.1d	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
07.0	Discuss the factors that affect whole body wellness. – The student will be able to:		
07.01	Define stress/stressors.	LAFS.910.RI.1.3	
07.02	Identify problem solving skills to resolve stress.	LAFS.910.RI.1.3	
07.03	Demonstrate stress reduction techniques.	LAFS.910.RI.2.4	
07.04	Demonstrate knowledge of Mental Health as a legitimate illness, equivalent to all general health conditions.		
07.05	Demonstrate knowledge of skin cancer with a focus on melanoma.		
07.06	Identify factors that explain why health occupations are emotionally and physically demanding.	LAFS.910.SL.1.1c	
08.0	Identify the needs of the terminally ill. – The student will be able to:		
08.01	Define stages of grief related to death and dying.	LAFS.910.RI.2.4 LAFS.910.RI.1.3	
08.02	Describe mortuary science.	LAFS.910.W.2.4 LAFS.910.SL.2.4 LAFS.910.RI.1.1 LAFS.910.RI.2.4	
08.03	Discuss and describe services provided by funeral directors/funeral homes.	LAFS.910.RI.2.4	
08.04	Discuss and describe services provided by hospice.	LAFS.910.W.3.7	
09.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:		
09.01	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens.	LAFS.910.RI.3.8	
09.02	Identify community resources and services available to the individual with diseases caused by blood borne pathogens.	LAFS.910.W.3.8	
09.03	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.	LAFS.910.W.3.8 MAFS.912.S-IC.1.1 MAFS.912.S-IC.2.6	
09.04	Demonstrate knowledge of the legal aspect of HIV/AIDS, including testing.	LAFS.910.SL.1.1D LAFS.910.L.1.1	
09.05	Apply infection control techniques designed to prevent the spread of diseases to the care of all patients following Centers for Disease Control (CDC) guidelines.	LAFS.910.RI.3.9	

<b>CTE Standards and Benchmarks</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
10.0	Relate the use of computers in the health care field. – The student will be able to:		
10.01	Differentiate between the various computer based diagnostic studies in healthcare (ex: X-ray, MRI, CT scan, and CPET).	LAFS.910.W.3.7	
10.02	Discuss how computers affect legal and ethical questions in the health field.	LAFS.910.W.3.8	
10.03	Discuss how HIPPA regulations affect the privacy of electronic health records.	LAFS.910.W.3.8 LAFS.910.W.3.9	
11.0	Demonstrate employability skills. – The student will be able to:		
11.01	Locate and identify local job openings in health care.	LAFS.910.W.3.7	
11.02	Complete a job application.	LAFS.910.W.2.4 LAFS.910.W.2.6	
11.03	Prepare for a job interview.	LAFS.910.SL.1.1B	
11.04	Discuss professionalism and the ethical role and responsibility of the healthcare worker.	LAFS.910.SL.1.1C	



## **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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 <u>Course Structure</u> 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**

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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.



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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

**Academic Alignment Table**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%

8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417120	46/87 56%	20/80 25%	5/83 6%	20/69 29%	1/67 1%	20/70 29%	21/69 30%	2/82 2%	15/66 23%	2/74 3%	20/72 28%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417120	8/67 12%	14/75 19%	8/54 15%	**	**	**	**

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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 28-33 encompass Health and Wellness 3:**

- 28.0 Identify and classify management and human resource strategies.
- 29.0 Demonstrate a working knowledge of current and legal issues in fitness and wellness.
- 30.0 Identify and describe fiscal and facility development.
- 31.0 Identify and describe basic human anatomy and physiology in relation to personal fitness or personal training.
- 32.0 Define, identify and describe basic fitness, wellness, and exercise prescription and programming concepts.
- 33.0 Classify and demonstrate competence and skill in the care and prevention of athletic injuries.

**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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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 and Wellness 3/ 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.

**Abbreviations:**

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

*Note: This course is pending alignment in the following categories: FS-M/LA*

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.0 Identify and classify management and human resource strategies. – The student will be able to:		
28.01 Identify management leadership styles.		
28.02 Identify the major functions of management.		
28.03 Classify activities as part of the planning function of management.		
28.04 Classify activities as part of the organizing function of management.		
28.05 Classify activities as part of the staffing function of management.		
28.06 Classify activities as part of the directing/controlling function of management.		
28.07 Select the most effective communication system.		
28.08 Demonstrate knowledge of the relationship between authority and responsibility to task accomplishment.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.09 Identify the different stages of goal setting.		
29.0 Demonstrate a working knowledge of current and legal issues in fitness and wellness. – The student will be able to:		
29.01 Demonstrate an understanding of negligence and basic legal terms.		
29.02 Demonstrate an understanding of contract law.		
29.03 Demonstrate an understanding of labor laws and their purpose in Florida.		
29.04 Demonstrate an understanding of workers compensation law.		
29.05 Demonstrate an understanding of tort law and its significance in the health field.		
29.06 Demonstrate an understanding of disability laws.		
29.07 Identify the personal trainers' responsibilities and duties within their legal scope of practice.		
29.08 Discuss the legal and ethical consequences of drug use with a focus on performance enhancing drugs and supplements.		
29.09 Outline and present a current and/or legal issue related to fitness and wellness.		
30.0 Identify and describe fiscal and facility development. – The student will be able to:		
30.01 Identify various types of budgets.		
30.02 Identify sources to become fiscally responsible as an exercise science professional.		
30.03 Prepare a budget spreadsheet that identifies the components of a budget.		
30.04 Identify requisitions and purchase orders and their use.		
30.05 Describe and design a process of inventory control.		
30.06 Describe the importance of a market analysis for the construction of a training facility.		
30.07 Identify the individuals in groups in the planning process of construction.		
30.08 Discuss the sources of funding for the construction of a facility.		
30.09 Design a training facility that includes identifying the sources of		



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
funding.		
31.0 Identify and describe basic human anatomy and physiology in relation to personal fitness or personal training. – The student will be able to:		SC.912.L.14.13 SC.912.L.14.14 SC.912.L.14.16 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.27 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.40 SC.912.L.14.42 SC.912.L.14.44 SC.912.L.14.46 SC.912.L.14.47 SC.912.L.14.48 SC.912.L.14.49 SC.912.L.14.50 SC.912.L.14.52 SC.912.L.16.3 SC.912.L.18.6 SC.912.L.18.8
31.01 Analyze directional terms referring to areas of the body.		
31.02 Evaluate the construct of the human skeleton form, including the structure and function of the different types of muscles.		
31.03 Compare and contrast the different muscle contractions including concentric, eccentric and isometric.		
31.04 Identify the origin, insertion and action for each major muscle.		
31.05 Evaluate the anatomy and physiology of each of the following systems and how they interact with each other: 31.05.01 nervous system 31.05.02 immune		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
31.05.03 lymphatic 31.05.04 vascular 31.05.05 circulatory 31.05.06 cardiac 31.05.07 pulmonary 31.05.08 respiratory 31.05.09 digestive 31.05.10 urinary 31.05.11 reproductive		
32.0 Understand the theories and practices of exercise physiology. - The student will be able to:		SC.912.L.14.39 SC.912.L.16.18 SC.912.L.18.2 SC.912.L.18.3 SC.912.L.18.4 SC.912.N.1.1
32.01 Perform patient education utilizing concepts of communication and differing learning styles.		
32.02 Classify health fitness standards, including components of wellness, describe health appraisals, fitness assessments, and exercise prescriptions.		
32.03 Compare and contrast lifestyle factors that improve health and increase longevity.		
32.04 Describe the relationship between the agonist, antagonist, fixators and synergist for muscle movement.		
32.05 Demonstrate an understanding of common training types.		
32.06 Identify risk factors that may interfere with safe participation in exercise		
32.07 Assess and research various techniques to assess body composition and its relationship to assessment of recommended body weight.		
32.08 Evaluate and explain the physiology of weight loss and management.		
32.09 Prepare and explain a beneficial lifetime exercise program and staying healthy in relation to cardio-respiratory exercise prescriptions.		
32.10 Define cardio-respiratory endurance and the benefits of cardio-respiratory endurance training.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
32.11 Define aerobic and anaerobic exercise and examples of each.		
32.12 Define and identify the principles that govern cardio-respiratory exercise prescription: Frequency, Intensity, Time and Type of Exercise.		
32.13 Demonstrate an understanding of length tension relationship and how it relates to muscles.		
32.14 Demonstrate an understanding of the concept of force coupling and how it relates to muscles.		
32.15 Differentiate between muscular strength and muscular endurance and types.		
32.16 Define and understand muscular flexibility.		
32.17 Define and understand the role of fitness in relation to stress management and maintaining health.		
32.18 Evaluate the physiological effects of illness, alcohol, tobacco and drugs.		
32.19 Describe the relationship between fitness and aging.		
32.20 Define and describe factors on how to select appropriate exercise.		
32.21 Demonstrate safe and proper techniques in using fitness, protective and personal training equipment.		
32.22 Prepare and creatively present experiences to help individuals enhance their personal health, as well as develop sound programs for others.		
32.23 Design a comprehensive training program.		
33.0 Classify and demonstrate competence and skill in the care and prevention of injuries. – The students will be able to:		
33.01 Demonstrate skills necessary to recognize the causes and preventative measures associated with athletic participation.		
33.02 Demonstrate knowledge and understanding of the care and prevention of fitness related injuries.		
33.03 Discuss the selection and use of appropriate modalities for athletic injuries.		
33.04 Identify acceptable selection and usage of reconditioning techniques.		
34.0 Apply principles of nutrition and wellness in assessing health and wellness. - The student will be able to:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
34.01 Demonstrate an understanding of supplementation including benefits, indications and contraindications		
34.02 Define basic nutrition and describe its relationship to health, wellness, and weight management.		
34.03 Discuss the national Dietary Guidelines for Americans.		
34.04 Identify and describe the relationship between nutrition, diet and athletic performance.		
34.05 Create a nutrition and wellness research paper.		
35.0 Perform medical office management duties. - The student will be able to:		
35.01 Evaluate different types of patient scheduling.		
35.02 Determine scheduling needs of the healthcare facility.		
35.03 Explain protocol for no-show, missed, cancelled or follow up appointments.		
35.04 Perform diagnostic testing using appropriate procedures.		
35.05 Explain processes, procedures and standardized forms as they pertain to patients.		
35.06 Demonstrate and follow financial procedures as it pertains to patients/clients.		
35.07 Analyze federal guidelines as pertains to a healthcare facility, to include, but not limited to OSHA, HIPAA, SDS, CMS.		
35.08 Perform office opening and closing procedures.		

## 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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 but is not limited to 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, 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 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

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	8417110	Health Science Foundations		1 credit	31-9099	3	
B	8417131	Allied Health Assisting 3		1 credit	31-9099	2	

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

**Academic Alignment Tables**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrat ed Science	Marine Science 1 Honors	Physical Science	Physics 1
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8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%



8417131	46/87 53%	25/80 31%	15/83 18%	24/69 35%	3/67 4%	25/70 36%	35/69 51%	4/82 5%	20/66 30%	3/74 4%	25/72 35%
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\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
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8417131	8/67 12%	17/75 23%	8/54 15%	#	#	18/45 40%	18/45 40%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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) – 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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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. Major areas of allied health are defined as physical therapy, radiation, EKG, laboratory and respiratory medicine, and occupational therapy. Other areas of health, medicine, dentistry, or veterinary may be included with instructor provided competencies.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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:		SC.912.L.14.14 SC.912.L.14.34 SC.912.L.14.36 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.47 SC.912.L.18.11 SC.912.N.1.1 SC.912.P.11.10
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.	LAFS.1112.L.3.6 LAFS.1112.RI.2.4	
28.02.06 Demonstrate knowledge of specimen differentiation and procedure		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	interference's.		
28.02.07	Perform communication skills specifically related to laboratory science.	LAFS.1112.SL.1.1b	
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.).	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
28.02.10	Explain the criteria set forth in CLIA to classify laboratory testing as waived, moderate complexity or high complexity.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
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).	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
28.03	If unlicensed physical restorative type skills is one of the selected allied health areas to be taught, students will:		SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.14 SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.17 SC.912.L.14.18 SC.912.L.14.19 SC.912.L.14.20 SC.912.N.1.1 SC.912.P.10.4
28.03.01	Describe the functions of bones and muscles as related to the practice of physical therapy.	LAFS.1112.SL.2.6	
28.03.02	Define disability and identify types of disabilities.	LAFS.1112.SL.2.6	
28.03.03	Name and discuss the avenues of physical therapy practice.	LAFS.1112.SL.1.2	
28.03.04	Describe equipment used in physical therapy.	LAFS.1112.RI.1.1	
28.03.05	Perform safe body mechanics and transfer	LAFS.1112.SL.2.4	
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).	LAFS.1112.RI.1.1 LAFS.1112.RI.1.2	
28.03.07	Describe the process of hydrotherapy.		
28.03.08	Perform communication skills specifically related to physical therapy.	LAFS.1112.SL.1.1b	
28.03.09	Identify, describe, and demonstrate the use of devices such as crutches, walkers, canes, and wheelchairs.	LAFS.1112.SL.2.4	
28.03.10	Demonstrate techniques used in active and passive range of motion exercises.		
28.03.11	Instruct patients in bed/wheelchair mobility.	LAFS.1112.SL.2.4	
28.03.12	Describe the relationship between long-term and short-term goals.	LAFS.1112.RI.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.04 If unlicensed occupational restorative type skills is one of the selected allied health areas to be taught, students will:		SC.912.N.1.1
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.	LAFS.1112.RI.1.1	
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.	LAFS.1112.SL.1.1b	
28.04.08 Perform and instruct range of motion exercises.	LAFS.1112.L.3.6	
28.04.09 Name and discuss the avenues of occupational therapy practice.	LAFS.1112.W.3.8	
28.04.10 Train the client in activities of daily living skills such as clothing care skills, food preparation, and money management.	LAFS.1112.SL.1.1a LAFS.1112.SL.2.4	
28.05 If unlicensed respiratory restorative type skills is one of the selected allied health areas to be taught, students will:		SC.912.L.14.36 SC.912.L.14.37 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.L.14.41 SC.912.L.14.44 SC.912.N.1.1
28.05.01 Name and discuss the avenues of respiratory care practice.	LAFS.1112.W.3.8	
28.05.02 Describe common respiratory diseases (asthma, emphysema, chronic bronchitis, and atelectasis) and common medications used to treat respiratory diseases.	LAFS.1112.W.3.8 LAFS.1112.L.3.6	
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.	LAFS.1112.W.2.4 LAFS.1112.W.3.8 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2	
28.05.06 Differentiate between various oxygen delivery devices (nasal cannulas, simple and re-breathing masks, oxy-hoods, and enclosures).	LAFS.1112.W.2.4 LAFS.1112.W.3.8	

CTE Standards and Benchmarks		FS-M/LA	NGSS-Sci
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.	LAFS.1112.W.2.4 LAFS.1112.W.3.8	
28.05.10	Discuss and practice the use of the pulse oximeter.		
28.05.11	Describe the equipment and use of humidity/aerosol.	LAFS.1112.W.2.4 LAFS.1112.W.3.8	
28.06	If medical administrative assisting type skills is one of the selected allied health areas to be taught, students will:		SC.912.P.10.18
28.06.01	Demonstrate an understanding of basic medical terminology e.g. prefixes, suffixes, abbreviations, and root words related to major body systems.	LAFS.1112.RI.2.4 LAFS.1112.L.3.4	
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.		
28.06.05	Understand what is required to create and submit a medical bill	LAFS.1112.RI.1.1	
28.06.06	Define a release of medical information, explanation of benefit, assignment of benefit, and electronic remittance advice.	LAFS.1112.L.3.6 LAFS.1112.RI.2.6	
28.06.07	Develop an understanding of healthcare coverage and be able to interpret the information contained on the patient's insurance card.	LAFS.1112.RI.1.1 LAFS.1112.RI.4.10	
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.	LAFS.1112.L.3.4c	
28.07	If unlicensed Radiologic type skills is one of the selected allied health areas to be taught, students will:		SC.912.L.14.36
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.	LAFS.1112.RI.1.3	
28.07.03	Describe how radiation produces an image on film and through digital technology.	LAFS.1112.RI.1.3	
28.07.04	Identify the process by which x-ray film is developed.		
28.07.05	Identify anatomical position and terminology medial, lateral, superior,	LAFS.1112.SL.2.4	



CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	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.).	LAFS.1112.SL.2.6 LAFS.1112.SL.2.4	
28.07.07	Explain appropriate exam(s) to the patient.	LAFS.1112.SL.2.4	
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:		SC.912.L.14.51 SC.912.L.14.52
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.	LAFS.1112.RI.3.8	
28.08.03	Discuss physical and emotional effects of aging and appropriate ways of dealing with them.	LAFS.1112.SL.2.6	
28.08.04	Recognize the stages of dementia and the care of residents in each stage.	LAFS.1112.SL.1.1d	
28.08.05	Discuss reality orientation, reminiscing, and validation therapy.	LAFS.1112.SL.1.2	
28.08.06	Describe ways to meet the nutritional needs through diet, dietary supplements, and mechanisms to provide supplements.	LAFS.1112.W.2.4	
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:		SC.912.L.14.36 SC.912.N.1.1
28.09.01	Describe the cardiovascular system.	LAFS.1112.SL.1.2 LAFS.1112.RI.1.3 LAFS.1112.SL.2.6	
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		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
the rhythms.		
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.	LAFS.1112.RI.3.8	
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.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
28.09.03.1 Calculate a patient's heart rate from the EKG tracing (for example 6-second method).	LAFS.1112.SL.2.4	
28.09.03.2 Perform a 12 lead EKG.		
28.09.04 Recognize normal and abnormal monitoring.	LAFS.1112.L.1.1	
28.10 If unlicensed veterinary type skills is one of the selected allied health areas to be taught, students will:		SC.912.L.14.52 SC.912.L.15.6 SC.912.L.16.10 SC.912.N.1.1
28.10.01 Discuss ethical considerations related to animal care and use.	LAFS.1112.RI.3.8	
28.10.02 Describe Science within the animal care industry.	LAFS.1112.SL.1.1a	
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.	LAFS.1112.L.3.6	
28.10.05 Describe basic concepts of animal nutrition.	LAFS.1112.L.3.6	
28.10.06 Provide appropriate general care to a variety of common companion animal species.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
28.10.07 Safely handle, restrain, confine, and examine companion animals,	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
28.10.08 Demonstrate proper grooming techniques for animals.	LAFS.1112.SL.1.1d	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.1112.L.1.1	
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.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
28.10.11	Describe basic knowledge of laboratory procedures used in veterinary practice.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
28.10.12	Assist with veterinary nursing procedures.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
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:		SC.912.L.14.6 SC.912.L.15.15 SC.912.L.16.1 SC.912.L.16.2 SC.912.L.16.3 SC.912.L.16.4 SC.912.L.16.5 SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.8 SC.912.L.16.9 SC.912.L.16.10
28.11.01	Comprehend technical vocabulary.	LAFS.1112.L.3.6	
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)	LAFS.1112.W.3.9b LAFS.1112.W.3.7	
28.11.06	Discuss testing methods and inspection procedures in relation to quality control.	LAFS.1112.SL.1.1a	
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.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
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.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
28.11.14	Utilize problem solving skills.		
28.11.15	Practice asepsis.		
28.11.16	Discuss sterilization techniques, including proper packaging of sterile goods.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

**Academic Alignment Table**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%



8417141	0/87 0%	0/80 0%	0/83 0%	0/69 0%	0/67 0%	0/70 0%	0/69 0%	0/82 0%	0/66 0%	0/74 0%	0/72 0%
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\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417141	12/67 18%	16/75 21%	11/54 20%	12/46 26%	12/45 27%	#	#

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.0 Use dental terminology. - The student will be able to:		
28.01 Identify and define common dental terms.	LAFS.910.L.3.6	SC.912.N.1.1
28.02 Demonstrate the use of proper dental terminology in the dental environment.	LAFS.910.W.1.2 LAFS.910.SL.2.4	SC.912.N.1.1
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.	LAFS.910.SL.1.1 LAFS.910.SL.2.4 MAFS.912.G-CO.1.5	SC.912.L.14.11 SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.17 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.39 SC.912.L.14.46 SC.912.L.14.52
29.02 Identify teeth and their landmarks.	LAFS.910.SL.1.1 LAFS.910.SL.2.4	SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.19
29.03 Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.		SC.912.L.14.12

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
29.04	Recognize and describe oral pathological conditions.	MAFS.912.S-CP.1.5	SC.912.L.14.6
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.	LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.L.14.6
30.02	Describe pathogens and modes of disease transmission.	LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.L.14.6 SC.912.L.14.52
30.03	Differentiate between aseptic and non-aseptic environments.	LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.L.14.6 SC.912.L.14.52
30.04	Perform aseptic handwashing technique.	LAFS.910.SL.2.4	SC.912.L.14.6
30.05	Describe and apply methods of cleaning, disinfection and sterilization.	LAFS.910.SL.2.4	SC.912.L.14.6
30.06	Identify chemicals and their uses for controlling the spread of disease in the dental environment.	LAFS.910.SL.2.4 LAFS.910.W.3.7	SC.912.L.14.6
30.07	Identify and practice the current CDC guidelines for infection control in dental healthcare settings.	LAFS.910.RI.4.10 LAFS.910.RI.1.2	SC.912.L.14.6
30.08	Describe the duties of the dental office safety coordinator.	LAFS.910.RI.4.10	SC.912.N.1.1
30.09	Identify areas of the OSHA Blood borne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.	LAFS.910.RI.4.10	SC.912.N.1.1
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.	LAFS.910.L.3.6	
31.02	Describe legal and ethical consideration/obligations in the dental team-patient relationship.	LAFS.910.RI.3.9	
31.03	Explain risk management.	LAFS.910.RI.1.1	
31.04	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC applicable to practice by the dental health workers.	LAFS.910.RI.1.2	
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.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.N.1.1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
32.02 Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.N.1.1
32.03 Maintain dental operator equipment-and instruments.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.N.1.1
32.04 Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.N.1.1
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.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.P.8.2
33.02 Describe the manipulative skills necessary to properly prepare dental materials for use both intraorally and extra orally.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.N.1.1
33.03 Identify the primary objectives of the Council on Dental Materials and Devices of the American Dental Association.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	
33.04 Identify organizations responsible for establishing standards for dental materials.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4 MAFS.912.N-Q.1.3	
33.05 Describe the physical conditions in the oral cavity which influence the selection of	LAFS.910.L.3.6	SC.912.P.8.2



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
dental materials.	LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.P.8.11
33.06 Describe the biological characteristics of dental materials which may limit their use in the oral cavity.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	SC.912.P.8.2 SC.912.P.8.11
33.07 List factors which must be considered when selecting dental materials.	LAFS.910.L.3.6 LAFS.910.RI.3.9 LAFS.910.RI.4.10 LAFS.910.SL.2.4	
33.08 Define terms related to dental materials and science.	LAFS.910.L.3.6	
34.0 Describe basic dental laboratory procedures. - The student will be able to:		
34.01 Identify properties and manipulate gypsum.	LAFS.910.L.3.8 LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.P.8.2 SC.912.P.10.7
34.02 Identify properties and manipulate impression materials.	LAFS.910.L.3.8 LAFS.910.RI.3.9 LAFS.910.RI.4.10 MAFS.912.A- CED.1.1	SC.912.P.8.2
34.03 Identify properties and manipulate extra orally used waxes.	LAFS.910.L.3.8 LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.P.8.2
34.04 Perform laboratory infection control.	LAFS.910.SL.2.4	SC.912.N.1.1 SC.912.L.14.6
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.	LAFS.910.SL.2.4	SC.912.N.1.1
35.02 Assemble instruments for general/and specialty dental procedures.	LAFS.910.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
36.0 Identify specialty dental procedures. - The student will be able to:		
36.01 Identify and describe oral maxillofacial surgery.	LAFS.910.L.3.6 LAFS.1112.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8	
36.02 Identify and describe orthodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6	
36.03 Identify and describe periodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6	
36.04 Identify and describe prosthodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6	
36.05 Identify and describe pedodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.W.3.8 LAFS.1112.L.3.6	
36.06 Identify and describe endodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6	
36.07 Identify and describe public health dentistry.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6 MAFS.912.S-CP.1.5	
37.0 Identify dental business office procedures. - The student will be able to:		
37.01 Describe appointment control.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.02 Describe an active recall system.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.03 Describe steps for maintaining accurate patient records.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.04 Describe steps for maintaining patient financial records and collecting fees.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.05 Describe methods of dental office inventory control.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.06 Describe public relations responsibilities of the secretary/receptionist.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
37.07 Identify skills required for operating on office equipment.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
37.08 Describe an optimal dental office environment.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	

## 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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of four courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

**Academic Alignment Table**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.



Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417151	19/87 22%	20/80 25%	1/83 1%	24/69 35%	#	21/70 30%	20/69 29%	3/82 4%	16/66 24%	5/74 7%	20/72 28%
8417152	19/87 22%	19/80 24%	#	19/69 28%	#	19/70 27%	19/69 28%	#	14/66 21%	#	19/72 26%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417151	8/67 12%	14/75 19%	8/54 15%	**	**	**	**
8417152	8/67 12%	14/75 19%	8/54 15%	**	**	**	**

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

**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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**Abbreviations:**

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

*Note: This course is pending alignment in the following categories: FS-M/LA*

<b>CTE Standards and Benchmarks</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</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.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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:		SC.912.P.8.1 SC.912.P.8.2 SC.912.P.8.11 SC.912.P.10.7 SC.912.P.12.12
31.01 Fabricate a variety of dental models from impressions using appropriate gypsum products and techniques,		
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:		SC.912.L.14.6 SC.912.L.17.16
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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

## Academic Alignment Table

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
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8417161	31/87 36%	26/80 33%	4/83 5%	23/69 33%	3/67 4%	25/70 36%	24/69 35%	2/82 2%	21/66 32%	2/74 3%	26/72 36%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417161	8/67 12%	16/75 21%	8/54 15%	#	#	6/45 13%	6/45 13%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

## Florida Standards for Technical Subjects

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

**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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.0 Describe the cardiovascular system. -- The student will be able to:		SC.912.L.14.6 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.49
28.01 Locate the heart and surrounding structures.	LAFS.1112.RI.3.7	
28.02 Diagram and label the parts of the heart and list the functions of each labeled part.	LAFS.1112.RI.3.7 LAFS.1112.W.2.4	
28.03 Trace the flow of blood through the cardiopulmonary system.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
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:		SC.912.L.16.10 SC.912.N.1.1
29.01 Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
29.02 Maintain a safe and efficient work environment.	LAFS.1112.SL.1.2	
29.03 Maintain EKG equipment so it will be safe and accurate.	LAFS.1112.SL.1.2	
29.04 Implement appropriate Joint Commission patient safety goals and adhere to HIPAA regulations regarding protected health information (PHI).	LAFS.1112.SL.1.2	
30.0 Demonstrate knowledge of, apply and use medical instrumentation modalities. -- The student will be able to:		SC.912.L.14.37 SC.912.N.1.1 SC.912.P.10.20 SC.912.P.12.2 SC.912.P.12.9
30.01 Calibrate and maintain EKG equipment in the work environment.	LAFS.1112.SL.1.2	
30.02 Identify three types of lead systems (standard/limb, augmented, and precordial/chest).	LAFS.1112.SL.2.5 LAFS.1112.RI.3.7	
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.	LAFS.1112.SL.1.2	
30.05 Identify artifacts and mechanical problems.	LAFS.1112.SL.1.2	
30.06 Perform a 3, 5, and 12 lead EKG.	LAFS.1112.SL.2.5	
30.07 Recognize normal sinus rhythm.	LAFS.11.12.RI.3.7 LAFS.1112.SL.1.2	
30.08 Report dysrhythmias that are not normal sinus rhythm.	LAFS.1112.SL.2.5	
30.09 Recognize sign and symptoms of cardiopulmonary compromise on the EKG tracing and understand the importance of rapid reporting.	LAFS.1112.RI.2.4 LAFS.1112.RI.2.4	
30.10 Verify accuracy of lead placement on the EKG.	LAFS.1112.SL.2.4 LAFS.1112.RI.3.7	
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:		SC.912.N.1.1
31.01 Describe the physical and mental preparation of the patient for EKG testing.	LAFS.1112.W.2.4	
31.02 Identify patient and verify the requisition order.	LAFS.1112.W.2.4	
31.03 Prepare patient for cardiovascular diagnostic testing.	LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
31.04 State precautions required when performing diagnostic procedures.	LAFS.1112.SL.2.4	
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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 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 three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

**Academic Alignment Table**



Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417171	50/87 57%	28/80 35%	8/83 10%	28/69 41%	3/67 4%	27/70 39%	29/69 42%	5/82 6%	24/66 36%	9/74 12%	32/72 44%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417171	10/67 15%	18/75 24%	8/54 15%	#	#	16/45 36%	16/45 36%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

**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.

**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 immobilization 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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**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>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
28.0 Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder. - The student will be able to:		SC.912.L.17.16 SC.912.P.8.10 SC.912.P.8.11 SC.912.P.10.21 SC.912.P.12.1 SC.912.P.12.3 SC.912.P.12.5
28.01 Describe the role of Emergency Medical Responder as a member of the EMS team.	LAFS.1112.L.1.1 LAFS.1112.L.1.2 LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.4.10 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
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.	LAFS.1112.RI.2.4 LAFS.1112.RI.3.7 LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.11.12.W.4.10 LAFS.1112.SL.2.4 LAFS.1112.L.1.1 LAFS.1112.L.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
28.03 Describe principles of safely operating a ground ambulance.	LAFS.1112.RI.2.4 LAFS.1112.RI.3.7 LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.11.12.W.4.10 LAFS.1112.SL.2.4 LAFS.1112.L.1.1 LAFS.1112.L.1.2	
28.04 Understand the guidelines of operating safety in and around a landing zone during air medical operations and transport.	LAFS.1112.RI.2.4 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
28.05 Implement appropriate Joint Commission patient safety goals.	LAFS.1112.RI.2.4 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
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.	LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
29.02 Describe information regarding a patient's condition and treatment that need to be communicated.	LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
29.03 Communicate the Emergency Medical Responder's observations and actions to whomever patient care is transferred.	LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
29.04 Describe and apply the principles of communicating with patients in a manner that achieves a positive relationship.	LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
29.05 Recognize simple medical prefixes, suffixes and combining words.	LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
30.0 Demonstrate an understanding of medicolegal aspects. - The student will be able to:		SC.912.L.16.10



CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
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.	LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.11.12.W.4.10 LAFS.1112.SL.2.4 LAFS.1112.L.1.1 LAFS.1112.L.1.2 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
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:		SC.912.L.14.39 SC.912.L.14.40 SC.912.P.12.12
31.01 Determine and record skin color, temperature and moistness.	LAFS.1112.L.3.4 LAFS.1112.L.3.6 LAFS.1112.SL.1.2 LAFS.1112.SL.2.4	
31.02 Demonstrate ability to accurately measure and record vital signs including manual blood pressure.	LAFS.1112.L.3.4 LAFS.1112.L.3.6 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
32.0 Use medical identification devices. - The student will be able to:		
32.01 Identify the most commonly used digital medical identification devices.	LAFS.1112.L.3.6	
32.02 Apply the information contained on or in the medical identification devices to patient assessment and patient care procedures.	LAFS.1112.L.3.6 LAFS.1112.SL.1.2	
33.0 Conduct a primary assessment of problems that are a threat to life if not corrected immediately. - The student will be able to:		SC.912.L.14.25
33.01 Determine and record the level of consciousness of the injured person including person, place, time, and events.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
33.02 Assess for an inadequate airway, inadequate respiration's, inadequate circulation, and profuse bleeding.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
33.03 Recognize when immediate correction is necessary.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
33.04 Assess patient and determine if the patient has a life threatening condition.	LAFS.1112.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
	LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
33.05 Use spinal precautions as appropriate.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
34.0 Demonstrate Basic Life Support (BLS) procedures. - The student will be able to:		SC.912.L.14.36 SC.912.L.14.37 SC.912.P.10.15
34.01 Establish and maintain an open airway using both manual and mechanical airway techniques.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
34.02 Restore breathing and circulation by means of cardiopulmonary resuscitation (CPR).	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
34.03 Demonstrate proficiency in the use of an automated external defibrillator (AED).	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
35.0 Recognize and control bleeding. - The student will be able to:		SC.912.L.14.34 SC.912.L.14.40
35.01 Identify items that can be used to control external bleeding and minimize the contamination of open wounds.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
35.02 Apply pressure dressings that will control bleeding and minimize the contamination of open wounds.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
35.03 Identify the likelihood of internal bleeding through observations of signs, symptoms, and mechanisms of injury.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
35.04 Care for a patient who exhibits the signs and symptoms of internal bleeding.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
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:		SC.912.P.10.15
36.01 Recognize the likelihood that shock may occur or be present on the basis of patient assessment and observation of a mechanism of injury.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
36.02 Provide anti-shock measures as a part of routine patient care.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.1112.SL.2.6	
37.0	Understand the importance of emergency medications. - The student will be able to:		SC.912.L.14.44
37.01	Understand the advantages, disadvantages, and techniques of self and peer administration of an intramuscular injection by auto injector.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.1.1 LAFS.1112.RI.3.7	
37.02	Describe the names, effects, indications, routes of administration, and dosages for specific medications (I.E chemical antidote auto injector devices).	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 MAFS.912.N-Q.1.3	
38.0	Demonstrate understanding of airway management, respiration, and artificial ventilation. - The student will be able to:		SC.912.L.14.43
38.01	Apply knowledge of anatomy and physiology to airway management procedures (I.E. oxygenation and perfusion).	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
38.02	Understand the pathophysiology of respiratory dysfunction.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
38.03	Use available mechanical devices to assure the maintenance of an open airway and assist ventilation according to American Heart Association (AHA) standards.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
38.04	Demonstrate proficiency in supplemental oxygen therapy including portable oxygen cylinder and oxygen delivery devices.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
38.05	Describe and demonstrate airway management utilizing upper airway suctioning.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
39.0	Provide secondary assessment. - The student will be able to:		SC.912.N.1.1
39.01	Conduct a methodical head-to-toe physical examination to discover conditions not found during the primary assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
39.02	Interview the sick or injured person to obtain facts relevant to the person's condition.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
39.03 Interview co-workers, witnesses, family members, or other individuals to obtain facts relevant to the person's condition.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.1.3	
40.0 Identify musculoskeletal injuries. - The student will be able to:		SC.912.L.14.12 SC.912.L.14.25 SC.912.L.14.28 SC.912.P.12.3
40.01 Identify the various types of musculoskeletal injuries.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.L.3.6	
40.02 Immobilize and otherwise care for suspected fractures, dislocations, sprains, and strains with available supplies and equipment, including commercially available and improvised devices.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
40.03 Demonstrate an understanding of the function and need for traction splints.		
41.0 Demonstrate proper immobilization of a cervical/spinal injury. - The student will be able to:		SC.912.L.14.13 SC.912.L.14.14 SC.912.L.14.25 SC.912.L.14.28
41.01 Identify need for spinal immobilization	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
41.02 Maintain in-line immobilization of cervical spine.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
41.03 Place proper fitting rigid extrication-type cervical collar.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
41.04 Place patient in supine position on full length spine board.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
41.05 Secure patient to immobilization device.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
42.0 Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs). - The student will be able to:		SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.14

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
42.01 Identify need for extremity immobilization.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
42.02 Assesses motor, sensory, and distal circulation in extremities.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
42.03 Place proper fitting splint on extremity.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
42.04 Reassess motor, sensory, and distal circulation in extremities.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
43.0 Provide emergency evacuation and transfer of a sick and/or injured person. - The student will be able to:		SC.912.N.1.1
43.01 Describe situations when a person should be evacuated or transferred.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7 LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.11.12.W.4.10 LAFS.1112.L.1.1 LAFS.1112.L.1.2	
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.	LAFS.1112.SL1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
43.03 Maintain safety precautions during evacuation and transfer.	LAFS.1112.SL1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
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:		SC.912.L.14.2 SC.912.L.14.6 SC.912.L.14.21 SC.912.L.14.24

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
		SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.32 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.44 SC.912.L.14.46 SC.912.L.14.49 SC.912.L.14.50 SC.912.L.14.51
44.01 Identify and care for patients with non-traumatic chest pain, utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.02 Identify and care for patients experiencing respiratory distress utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.03 Identify and care for patients experiencing a diabetic emergency utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.04 Identify and care for a patient who is experiencing a seizure utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.05 Identify and care for a patient who has ingested, inhaled, absorbed. or been injected with a poisonous substance.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.06 Identify and care for a patient who is in an altered state of consciousness utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.07 Identify and care for a patient who is experiencing a stroke utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.08 Identify and care for a patient who has a foreign body in the eye utilizing patient	LAFS.1112.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
assessment.	LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
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.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
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.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
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.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
45.02 Care for injured/ill children.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
45.03 Care for the injured/ill elderly.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
45.04 Care for the injured/ill physically disabled.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
45.05 Care for the injured/ill developmentally disabled.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
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 on the basis of patient assessments.	LAFS.1112.RI.3.7 LAFS.1112.SL.1.1 LAFS.1112.SL.1.3 LAFS.1112.SL.2.4	
46.02 Use triage tags or other identification devices available locally to indicate priorities for pre-hospital emergency care and transportation to medical facilities.	LAFS.11.12.L.3.6	
46.03 Work as a member of a team to perform triage at locations of multiple casualty incidents.	LAFS.1112.SL.1.1 LAFS.1112.SL.1.3	
46.04 Work as a member of a team to perform patient assessments at locations of multiple casualty incidents.	LAFS.1112.SL.1.1 LAFS.1112.SL.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
46.05 Work as a member of a team to carry out patient care procedures at the locations of multiple casualty incidents.	LAFS.1112.SL.1.1	
46.06 Demonstrate knowledge of the operating procedures during a terrorist event or during a natural or man-made disaster.	LAFS.1112.RI.3.7	
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	LAFS.1112.RI.2.4 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.L.3.4 LAFS.1112.L.3.6 MAFS.912.N-Q.1.3	
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 on the basis of an assessment of a scene.	LAFS.1112.SL.1.2	
48.0 Recognize entrapment situations. - The student will be able to:		SC.912.P.10.3
48.01 Identify accident-related hazards and undertake hazard control measures consistent with the capabilities of the Emergency Medical Responder and available equipment.	LAFS.1112.SL.1.2	
48.02 Use available equipment safely to gain access to persons who are entrapped.	LAFS.1112.SL.1.2	
48.03 Use available equipment safely to disentangle persons from mechanisms of entrapment.	LAFS.1112.SL.1.2	
49.0 Assist with emergency childbirth. - The student will be able to:		SC.912.L.14.33 SC.912.L.14.41
49.01 Evaluate a mother to determine whether delivery is imminent.	LAFS.1112.SL.1.2	
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.	LAFS.1112.SL.1.2	
50.0 Identify critical incident stressors. - The student will be able to:		SC.912.L.14.52 SC.912.L.16.8
50.01 Identify stressors which may affect the performance of an Emergency Medical Responder.	LAFS.1112.SL.1.2	
50.02 Identify stressors which may affect the behavior of a sick or injured person.	LAFS.1112.SL.1.2	
50.03 Carry out procedures to minimize critical incident stress.		



## 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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	8417191	Home Health Aide 3	REG NURSE 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)*

**Academic Alignment Table**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417191	30/87 34%	25/80 31%	6/83 7%	25/69 36%	2/67 3%	25/70 36%	28/69 41%	3/82 4%	21/66 32%	2/74 3%	25/72 35%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417191	9/67 13%	17/75 23%	8/54 15%	#	#	11/45 24%	11/45 24%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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 Perform supervised management functions, following the patient plan of care.
- 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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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 prepare 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.

**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>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
28.0	Use verbal and written communications specific to home health aide. - The student will be able to:		SC.912.N.1.1
28.01	Obtain specified data from patient and family.	LAFS.1112.SL.1.1a	
28.02	Utilize verbal and written information to assist with the patient's plan of care.	LAFS.1112.L.1.1 LAFS.1112.SL.1.1d	
29.0	Demonstrate legal and ethical responsibilities specific to home health aide. - The student will be able to:		SC.912.L.16.10
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 substance abuse.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
29.04	Follow legal guidelines in charting.	LAFS.1112.RI.3.8	
29.05	Exhibit behavior supporting and promoting residents' rights.	LAFS.1112.SL.2.4	
29.06	Recognizes and follows limits if job restrictions.	LAFS.1112.RI.3.8	
30.0	Perform physical comfort and safety functions specific to home health aide. - The student will be able to:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
30.01 Maintain a clean and safe home environment for the patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.02 Adjust bed and side-rails.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.03 Transfer patient with mechanical lifters using proper body mechanics and patient safety measures.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.04 Turn and position patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.05 Apply protective devices as directed (e.g. vest or belt).	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.06 Apply comfort devices as directed (e.g. foot-board, over-bed cradle, alternating pressure mattress).	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.07 Assist patient to dangle.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.08 Assist patient in ambulation, including the use of crutch, cane, or walker.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.09 Assist patient in using wheelchair.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.10 Assist patient with care and use of prosthetic/orthotic devices.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.11 Administer back rub.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
30.12 Identify emergency evacuation procedures with adaptations to the home setting.	LAFS.1112.SL.2.4	
30.13 Implement appropriate joint commission patient safety goals.	LAFS.1112.SL.2.4	
31.0 Provide personal patient care. - The student will be able to:		
31.01 Give bed bath; observe and report changes in patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.02 Practice 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.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.03 Assist with shower or tub bath, including use of specialty tubs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.04 Assist patient with sink, tub, shower, or bed shampoo.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.05 Shave patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
31.06 Groom patient, including hair, skin, foot, and nail care.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.07 Assist with and/or administer oral hygiene.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.08 Assist patient with toileting.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.09 Assist patient to dress.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
31.10 Assist patient with meals.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.0 Perform patient care procedures. - The student will be able to:		
32.01 Make unoccupied/occupied bed.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.02 Assist patient in passive range-of-motion exercises.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.03 Apply anti-embolic hose and sequential compression devices.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.04 Collect, strain, and/or test routine urine specimen.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.05 Monitor catheter drainage system.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.06 Monitor fluid intake and output (I&O), including forcing and restricting fluids.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
32.07 Observe, record, and report patient's emesis.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
32.08 Assist patient with moist and dry heat applications to include the sitz bath.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.09 Assist with ostomy care.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.10 Collect stool specimen.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
32.11 Care for patients receiving oxygen therapy.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
33.0 Apply principles of nutrition. - The student will be able to:		SC.912.L.18.1 SC.912.L.18.2 SC.912.L.18.4

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
33.01 Identify nutrients and food groups.	LAFS.1112.RI.3.8	
33.02 Explain regional, cultural, and religious food preferences.	LAFS.1112.SL.1.2	
33.03 Describe special diets.	LAFS.1112.RI.3.8	
33.04 List factors that must be considered when purchasing food.		
33.05 Prepare a basic food plan.	LAFS.1112.RI.3.8	
33.06 List factors that must be considered when storing food.		
33.07 Identify methods of maintaining fluid balance.		
33.08 Identify methods of food preparation.		
33.09 Discuss preparation and serving of trays in the home.	LAFS.1112.SL.1.2	
34.0 Provide care for geriatric patients. - The student will be able to:		
34.01 Identify safety principles, as related to the elderly.	LAFS.1112.RI.1.3	
34.02 Describe general characteristics, particular needs, and problems of the elderly.	LAFS.1112.RI.1.3	
34.03 Identify attitudes and living habits that promote positive mental and physical health for the elderly.	LAFS.1112.RI.1.3	
34.04 Distinguish between fact and fallacy about the aging process.	LAFS.1112.W.3.8	
34.05 Identify community resources and services available to the elderly.	LAFS.1112.RI.1.3 LAFS.1112.W.2.6	
34.06 Apply Reality Orientation Techniques and Validation Therapy.	LAFS.1112.SL.1.1b LAFS.1112.SL.2.5	
34.07 Provide and involve patients in diversional activities.	LAFS.1112.SL.1.1b LAFS.1112.SL.2.5	
34.08 Identify common alterations in elderly patient behavior or health status and follow up within the home health aide scope of performance.	LAFS.1112.SL.1.1b	
34.09 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).	LAFS.1112.SL.2.5	
35.0 Apply the principles of infection control specific to home health aide. - The student will be able to:		SC.912.L.14.52 SC.912.L.16.8
35.01 Provide care for patients with infectious diseases in the home.	LAFS.1112.SL.2.5	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
35.02 Follow isolation procedures with food tray, garments, and other materials in the home.	LAFS.1112.SL.2.5	
35.03 Utilize standard precautions in all home care.	LAFS.1112.SL.2.5	
36.0 Provide bio-psycho-social support. - The student will be able to:		
36.01 Discuss family roles and their significance to health.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.02 Respond to patient and family emotional needs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.0 Perform supervised management functions, following the patient plan of care. - The student will be able to:		
37.01 Organize patient-care assignments.	LAFS.1112.W.4.1	
37.02 Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
38.0 Assist with rehabilitative activities. - The student will be able to:		
38.01 List the purposes of restorative (rehabilitation) programs.	LAFS.1112.W.2.6	
38.02 Assist patient with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.03 Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
39.0 Perform home health-care services. - The student will be able to:		
39.01 Follow an established work plan with the patient and family.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
39.02 Perform patient-related cleaning tasks and laundry.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
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.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1 LAFS.1112.SL.1.2	
39.05 Demonstrate how to utilize equipment and supplies in the home.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	

## **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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of four courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	8417201	Medical Laboratory Assisting 3	LAB TECH @7 7G TEC MED !7 G	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)*

**Academic Alignment Tables**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%

8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417201	30/87 34%	23/80 29%	6/83 7%	23/69 33%	2/67 3%	22/70 31%	23/69 33%	5/82 6%	18/66 27%	2/74 3%	23/72 32%
8417202	27/87 31%	25/80 31%	6/830% 0%	0/69 0%	0/67 0%	22/70 31%	0/69 0%	0/82 0%	0/66 0%	2/74 3%	23/72 32%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417201	9/67 13%	16/75 21%	8/54 15%	#	#	9/45 20%	9/45 20%
8417202	10/67 15%	18/75 24%	8/54 15%	#	#	5/45 11%	5/45 11%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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 occupational completion point for Medical Lab Assistant. 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.

**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>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.	LAFS.1112.SL.2.4 LAFS.1112.RI.1.3	
28.03	Explain in detail the importance of identifying patients correctly when drawing blood.	LAFS.1112.SL.2.4 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2	
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.	LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.W.2.4	



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.	LAFS.1112.RI.2.4	
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.).	LAFS.1112.W.2.4	
30.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:		SC.912.L.14.3 SC.912.L.14.4 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.37 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.L.14.41
30.01	Describe and define major body systems with emphasis on the circulatory system.	LAFS.1112.RI.2.4 LAFS.1112.W.2.4	
30.02	List and describe the main superficial veins used in performing venipuncture.	LAFS.1112.W.2.4	
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.	LAFS.1112.W.2.4	
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:		SC.912.L.14.35 SC.912.N.1.1
31.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.	LAFS.1112.RI.2.4 LAFS.1112.W.2.4	
31.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.2.4	
31.03	Identify and discuss proper use of supplies used in collecting short-draw specimens or difficult draws.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	
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.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	

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.	LAFS.1112.W.2.4	
31.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.	LAFS.1112.W.2.4	
31.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.2.4 MAFS.912.N-Q.1.3	
32.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:		SC.912.L.14.35 SC.912.L.14.36 SC.912.N.1.1
32.01	Follow approved procedure for completing a laboratory requisition form.		
32.02	Recognize a properly completed requisition.	LAFS.1112.RI.2.4	
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.	LAFS.1112.SL.2.6 LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
32.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.	LAFS.1112.W.2.4 LAFS.1112.RI.2.4	
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.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
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.	LAFS.1112.W.2.4	
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.	LAFS.1112.W.2.4	
32.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.	LAFS.1112.W.2.4	
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:		SC.912.L.14.52 SC.912.N.1.1
33.01	Define the term hospital acquired infection.	LAFS.1112.W.2.4	
33.02	Describe and practice procedures for infection prevention including hand washing skills.	LAFS.1112.W.2.4	
33.03	Discuss transmission based precautions.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
33.04	Identify potential routes of infection and their complications.	LAFS.1112.RI.2.4	
34.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:		SC.912.N.1.1
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.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 MAFS.912.N-Q.1.3	
34.02	Demonstrate knowledge of accessioning procedures.		
34.03	Describe the significance of time constraints for specimen collection, transporting and delivery.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
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:		SC.912.N.1.1
35.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.		
35.02	Practice appropriate patient safety.	LAFS.1112.SL.1.1a LAFS.1112.W.1.2b	
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.	LAFS.1112.W.1.2b	
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 occupational completion point for Medical Lab Assistant. 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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
36.03 Explain the differences in requirements for a physician practice laboratory, a hospital laboratory and an independent clinical laboratory.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
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.	LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
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:		SC.912.N.1.1
37.01 Explain the characteristics of the International Classification of Disease System	LAFS.1112.W.1.2b,c	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
(ICD), and its important function in substantiating the clinical record.	LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a; LAFS.1112.L.3.4c	
37.03 Explain the differences between analyte, method, and unlisted procedure CPT codes and the hierarchy for selecting CPT codes for reporting laboratory tests.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c LAFS.1112.L.3.6	
37.05 Review the concept of congressionally mandated screening tests under the Medicare Program.	LAFS.1112.L.3.4c	
38.0 Demonstrate basic knowledge of microbiology. -- The student will be able to:		SC.912.L.14.4 SC.912.L.14.6 SC.912.L.14.52 SC.912.N.1.1
38.01 Perform techniques of microbiology related to disinfection techniques.		
38.02 Discuss techniques of microbiology related to isolation techniques.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
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.	MAFS.912.N-Q.1.3	
38.06 Understand the staining and microscopic examination of gram stains.	LAFS.1112.L.3.6	
38.07 Discuss techniques of microbiology related to primary inoculation media, specimen types, and transfer of cultures.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
38.08 Perform basic techniques of microbiology in respect to routine and emergency specimen collection including time constraints.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c LAFS.1112.L.3.6	
38.09 Discuss classification, composition and preparation of culture media.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.1112.L.3.6 MAFS.912.N-Q.1.3	
39.0	Demonstrate basic knowledge of urinalysis. – The student will be able to:		SC.912.L.14.47 SC.912.N.1.1
39.01	Understand urinalysis techniques related to normal and abnormal components of the urine.	LAFS.1112.L.3.6 MAFS.912.S-IC.2.6	
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.	MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.3	
39.05	Discuss urinalysis techniques related to urine specific gravity techniques.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.3	
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
39.08	Perform urinalysis techniques related to principles and use of centrifuge.	MAFS.912.N-Q.1.3	
40.0	Demonstrate basic knowledge of clinical chemistry. – The student will be able to:		SC.912.N.1.1 SC.912.P.10.18
40.01	Perform techniques of clinical chemistry related to metric measurement.	MAFS.912.N-Q.1.3	
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.	MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
40.04	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6 MAFS.912.S-IC.1.1	
40.05	Discuss the importance of quality assurance as it relates to patient results.		

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
40.06 Discuss techniques of clinical chemistry related to visual colorimetry, calibration and use of the spectrophotometer.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.N-Q.1.3 MAFS.912.S-IC.1.1	
40.07 Demonstrate an understanding of the relationship between common clinical chemical tests and specific body systems and disorders.	LAFS.1112.W.1.2 a, b, c LAFS.1112.W.2.4 LAFS.1112.L.3.6 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6 MAFS.912.S-IC.1.1 MAFS.912.S-IC.1.2 MAFS.912.S-MD.2.7	
41.0 Demonstrate basic knowledge of hematology. -- The student will be able to:		SC.912.L.14.34 SC.912.N.1.1
41.01 Discuss techniques of hematology related to counting formed elements of blood.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.N-Q.1.3 MAFS.912.S-IC.1.1 MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1	
41.02 Perform techniques of hematology related to preparation and staining.		
41.03 Discuss techniques of cell differential microscopic examination of blood films.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
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.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.S-IC.2.6	
41.07 Perform techniques of hematology related to hemoglobin tests.	MAFS.912.S-IC.2.6, MAFS.912.S-MD.2.7	
41.08 Understand the use of and importance of red blood cell indices.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	MAFS.912.S-IC.1.2 MAFS.912.S-IC.2.6	
41.09 Discuss basic techniques of hematology related to normal and abnormal physiology.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.S-IC.1.1 MAFS.912.S-IC.1.2 MAFS.912.S-IC.2.6 MAFS.912.S-MD.2.7 MAFS.912.N-Q.1.3	
42.0 Demonstrate basic knowledge of and perform clinical laboratory point of care (POC) testing (Waived). -- The student will be able to:		SC.912.N.1.1
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:		SC.912.N.1.1
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.		



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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:		SC.912.N.1.1
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.

### 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 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

8417100 - Health Science Anatomy and Physiology  
8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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.**

## Academic Alignment Table

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417211	35/87 40%	27/80 34%	6/83 7%	27/69 39%	4/67 6%	25/70 36%	28/69 41%	5/82 6%	23/66 35%	5/74 5%	26/72 36%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417211	14/67 21%	17/75 23%	10/54 19%	8/46 17%	8/45 18%	17/45 38%	17/45 38%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

### **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 a nursing home, 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 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.

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 plan of care.
- 38.0 Assist with restorative (rehabilitative) activities.
- 39.0 Perform skills related to the hospital setting (optional).

**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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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. The course is an exit point with an OCP B completion.

**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>		<b>FS-M/LA</b>	<b>NGSSS-Sci</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.	LAFS.910.SL.1.1c LAFS.910.RI.3.7 LAFS.1112.SL.1.1A,C LAFS.1112.RI.3.7	
28.02	Utilize verbal and written information to assist with the patient's plan of care.	LAFS.910.SL.1.1c LAFS.910.RI.3.7 LAFS.1112.SL.1.1D,C LAFS.1112.L.1.1 LAFS.1112.RI.3.7	
28.03	Demonstrate use of the communication system.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
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.	LAFS.1112.RI.3.8	
29.02	Describe the purpose of the chain of communication (i.e., to resolve patient or employee problems).	LAFS.910.RI.2.4 LAFS.910.SL.2.4 LAFS.1112.W.1.2	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.1112.RI.2.4 LAFS.1112.SL.2.4	
29.03	Follow policies and procedures affecting the health, safety, and well-being of patients.		
29.04	Recognize and report signs of substance abuse.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
29.05	Demonstrate the understanding of vulnerable population abuse and reporting procedures per agency.		
29.06	Follow legal guidelines in documentation.	LAFS.1112.RI.3.8	
29.07	Demonstrate methods regarding risk management including prevention and quality of care.		
29.08	Exhibit behavior supporting and promoting patients' and/or residents' rights.	LAFS.1112.SL.2.4	
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	Maintain patient units and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.02	Maintain service areas on the units including supplies and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.03	Observe, report, and record changes in the patient's behavior daily, including mental awareness.	LAFS.1112.RI.1.2 LAFS.1112.W.1.2B	
30.04	Adjust bed and side-rails.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.05	Lift, hold, and transfer patients including the use of the various assistive devices and equipment, utilizing proper body mechanics and patient safety measures.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.06	Turn and position patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.07	Demonstrate the proper use of a gait belt in both transfer and ambulation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.08	Transfer patient to stretcher.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci
30.09 Apply protective devices as directed (e.g., vest and belt).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.10 Apply comfort devices as directed (e.g., foot-board, over bed cradle, alternating pressure mattress).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.11 Assist patient to dangle.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.12 Assist patient in ambulation, including the use of crutch, cane, or walker.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
30.13 Assist patient in using wheelchair.		
30.14 Assist patient with care and use of prosthetic/orthotic devices.		
30.15 Describe emergency procedures utilized in the clinical area(s).	LAFS.910.W.1.2.c LAFS.910.W.1.2.d LAFS.910.W.1.2.e LAFS.910.SL.2.4 LAFS.1112.SL.2.4 LAFS.1112.W.1.2.c,d,e	
30.16 Implement appropriate regulatory and accrediting agency patient safety guidelines.		
<b>31.0 Provide personal patient care. - The student will be able to:</b>		
31.01 Give bed bath; observe and report changes in patient including skin and level of consciousness.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.02 Administer back rub.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.03 Assist with shower or tub bath, including the use of specialty tubs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.04 Assist patient with sink, tub, shower, or bed shampoo.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.05 Demonstrate the use of a safety and/or electric razor to shave the patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.06 Groom patient, including hair, skin, foot, hand and nail care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.07 Assist with and/or administer oral hygiene including denture care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.08 Assist patient with toileting using various types of restorative and rehabilitative equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.09 Assist patient to dress.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
31.10 Assist patient with meals.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.11 Assist with bowel and bladder training.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.12 Assist and/ or provide perineal care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.13 Empty, measure and record urinary output and/or drainage.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
31.14 Assist patient with both donning and doffing prosthesis and brace.		
31.15 Demonstrate application and use of a leg bag, leg strap and dignity bag.		
31.16 Monitor and assist with the drainage of urostomy bags and colostomy bags.		
32.0 Perform patient care procedures. - The student will be able to:		
32.01 Demonstrate ability to accurately measure, record and report vital signs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
32.02 Assist with the admission of a patient and/or resident.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.03 Assist with transfer of patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.04 Assist with discharge of patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.05 Make unoccupied/occupied bed.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.06 Measure and record patient's height and weight.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1  MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
32.07 Assist patient in passive range-of-motion exercises.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
32.08 Apply anti-embolic hose and sequential compression devices.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.09 Collect, strain, and/or test routine urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.10 Collect timed urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
32.11 Collect clean-catch (midstream-voided) urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.12 Record fluid intake and output (I&O).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
32.13 Observe, record, and report patient's emesis.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
32.14 Monitor and provide with care of urinary catheters and drainage systems for both males and females.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.15 Assist with ostomy care including emptying or changing ostomy bags that do not adhere to the skin.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.16 Collect stool specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.17 Perform postmortem care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.18 Maintain patient-belongings list.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.19 Assist the nurse with care of the patient with complex medical needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
32.20 Assist with the collection of a sputum specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
33.0 Apply principles of nutrition. - The student will be able to:		SC.912.L.18.1 SC.912.L.18.2 SC.912.L.18.4
33.01 Identify nutrients and food groups.	LAFS.910.RI.1.2 LAFS.1112.RI.3.8 LAFS.1112.RI.1.2	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
33.02 Explain regional, cultural, and religious food references.	LAFS.910.W.1.2c,d,e LAFS.910.SL.2.4 LAFS.1112.SL.1.2 LAFS.1112.W.1.2c,d,e LAFS.1112.SL.2.4	
33.03 Describe special diets.	LAFS.910.W.1.2c,d,e LAFS.910.SL.2.4 LAFS.1112.RI.3.8 LAFS.1112.W.1.2c,d,e LAFS.1112.SL.2.4	
33.04 Prepare a basic food plan.	LAFS.1112.RI.3.8 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
33.05 Check patient's diet tray for accuracy.	LAFS.1112.SL.1.2	
33.06 Demonstrate knowledge of the need for thickened liquids and fluid consistency.		
33.07 Identify methods of maintaining fluid balance including forcing and restricting fluids.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
33.08 Monitor and document Nutritional Intake.		
34.0 Provide care for geriatric patients. - The student will be able to:		
34.01 Identify methods and procedures to prevent pressure ulcers.		
34.02 Identify methods to prevent falls in the elderly.		
34.03 Identify safety principles as related to the elderly.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
34.04 Describe general characteristics, particular needs, and problems of the elderly.	LAFS.910.RI.2.4 LAFS.1112.RI.1.3 LAFS.1112.RI.2.4	
34.05 Identify attitudes and living habits that promote positive mental and physical health for the elderly.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
34.06 Distinguish between fact and fallacy about the aging process.	LAFS.1112.W.3.8	
34.07 Identify the need for community resources and services available to the elderly and their family.	LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.RI.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.2.6 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
34.08 Apply reality orientation techniques and validation therapy unless it is contraindicated by the patient diagnosis (Alzheimer's or Dementia).	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
34.09 Provide and involve patients in diversional activities.	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
34.10 Identify common alterations in elderly patient behavior.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.SL.1.1B LAFS.1112.RI.1.2	
34.11 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).	LAFS.1112.SL.2.5	
34.12 Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimer's.	LAFS.1112.RI.3.7	
34.13 Demonstrate awareness of common behaviors in drug use and abuse in the elderly.		
34.14 Report concerns to the nurse related to drug use and abuse in the elderly patient.		
34.15 Identify components of the grief process.		
34.16 Demonstrate an understanding of end of life care, hospice and palliative care.		
35.0 Apply the principles of infection control specific to nursing assisting. - The student will be able to:		
35.01 Provide care for patients with infectious diseases applying the principles of "Standard Precautions" utilized with all patients as well as special procedures required.	LAFS.1112.SL.2.5	
35.02 Set up isolation unit using proper personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
35.03 Follow isolation procedure with food tray, garments, and other materials.	LAFS.1112.SL.2.5	
35.04 Collect specimen from patient in isolation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.0 Provide biological, psychological, and social support. - The student will be able to:		
36.01 Discuss family roles and their significance to health.	LAFS.910.SL.1.1a LAFS.1112.SL.1.1A,D LAFS.1112.L.1.1	
36.02 Respond to patient and family emotional needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

<b>CTE Standards and Benchmarks</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
37.0	Perform supervised organizational functions, following the patient plan of care. - The student will be able to:		
37.01	Organize patient-care assignments.	LAFS.1112.W.4.1	
37.02	Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
38.0	Assist with restorative (rehabilitative) activities. - The student will be able to:		
38.01	List the purposes of restorative (rehabilitation) program.	LAFS.910.W.1.2e LAFS.910.W.2.4 LAFS.1112.W.1.2e LAFS.1112.W.2.4 LAFS.1112.W.2.6	
38.02	Assist patient with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.03	Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.0	Perform skills related to the hospital setting (optional). - The student will be able to:		SC.912.L.14.11 SC.912.L.14.14 SC.912.L.14.51 SC.912.L.14.6 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.44
39.01	Care for hospital equipment and supplies.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.02	Transfer patient to stretcher.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.03	Assist patient to apply binders.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.04	Care for patient in skin and skeletal traction.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.05	Assist with pre-operative and post-operative patient care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.06	Reinforce dressings under the supervision of the RN/LPN.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.07	Obtain and record an apical pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
39.08 Obtain and record an apical-radial pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
39.09 Obtain and record pedal pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.10 Provide cast care and/or pin care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
39.11 Provide care for eye glasses, artificial eyes, and contact lens.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

## **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.

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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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)	31-9099 Healthcare Support Workers, All Other 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 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 consisting of four courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

8417100 - Health Science Anatomy and Physiology  
8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

## Academic Alignment Tables

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%



8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417231	30/87 34%	24/80 30%	5/83 6%	23/69 33%	3/67 4%	22/70 31%	22/69 32%	2/82 2%	18/66 27%	3/74 4%	24/72 33%
8417232	21/87 24%	21/80 26%	2/83 2%	21/69 30%	2/67 3%	20/70 29%	21/69 30%	2/82 2%	16/66 24%	2/74 3%	21/72 29%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417231	9/67 13%	15/75 20%	8/54 15%	#	#	7/45 16%	7/45 16%
8417232	10/67 15%	15/75 20%	8/54 15%	#	#	1/45 2%	1/45 2%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.0 Demonstrate knowledge of the visual system. - The students will be able to:		
28.01 Identify the anatomy of the eye.	LAFS.1112.L.3.6	SC.912.N.1.1 SC.912.L.14.14 SC.912.L.14.21 SC.912.L.14.24 SC.912.L.14.11 SC.912.L.14.19 SC.912.L.14.22 SC.912.L.14.26 SC.912.L.14.39 SC.912.L.14.50
28.02 Describe the physiology of each part of the eye.	LAFS.1112.W.1.2	SC.912.L.14.19
28.03 Describe the visual pathway.	LAFS.1112.W.1.2	SC.912.L.14.24
28.04 Define refractive errors.	LAFS.1112.L.3.6	SC.912.P.10.22
28.05 Explain the most common conditions of the eye.	LAFS.1112.W.1.2	SC.912.L.14.6 SC.912.L.14.39 SC.912.L.14.50
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.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.		SC.912.L.14.6 SC.912.L.14.39 SC.912.L.14.50 SC.912.L.14.52
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.	MAFS.912.N-Q.1.3	SC.912.N.1.1
30.02 Accurately screen and record patient visual acuity.	MAFS.912.N-Q.1.3	SC.912.N.1.1
30.03 Accurately evaluate and record.		SC.912.N.1.1
30.3.01 Dominant eye and hand.		SC.912.N.1.1
30.3.02 Cover test for muscular imbalance.		SC.912.N.1.1
30.3.03 Saccadic for erratic eye movements.		SC.912.N.1.1
30.3.04 Near point of convergence.		SC.912.N.1.1
30.3.05 Pursuits, rotations and versions.		SC.912.N.1.1
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.	LAFS.1112.SL.2.6 LAFS.1112.L.1.1 LAFS.1112.L.1.2	
31.03 Organize office procedures from a management perspective.		
31.3.01 Verification of insurance benefits.		
31.3.02 Medical records management.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.		SC.912.N.1.1
32.02 Distinguish lens criteria for myopic, hyperopic, astigmatic and presbyopic correction.	LAFS.1112.L.3.6	SC.912.P.10.22
32.03 Identify the different designs of multifocal lenses to fit the patient's needs.		SC.912.P.10.22
32.04 Calculate focal lengths from dipotric values.		SC.912.P.10.22
32.05 Measure vertex distance and compensate for contact lens use.	MAFS.912.N-Q.1.3	
32.06 Accurately measure a patient's needs with the use of a phoropter.		SC.912.N.1.1
32.07 Define prism imbalance, vertical imbalance and full imbalance.	LAFS.1112.L.3.6	SC.912.P.10.18
32.08 Identify the effects of optical prism on lenses.	LAFS.1112.SL.1.1	SC.912.P.10.18 SC.912.P.10.22
32.09 Describe the effects of types of tint on the eye.	LAFS.1112.SL.1.1	SC.912.P.10.18
32.010 Estimate the best transmission value related to light.		SC.912.P.10.18
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.	LAFS.1112.RI.3.9	
33.02 Compare features with large, long and small nasal attributes.	LAFS.1112.RI.3.9	
33.03 Contrast hair and skin tone.	LAFS.1112.RI.3.9	
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.		



<b>CTE Standards and Benchmarks</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
33.07 Select a frame considering temple length.		
33.08 Identify and record frame measurements and markings.		SC.912.N.1.1

**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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.	MAFS.912.N-Q.1.3	
34.03 Demonstrate pupillary distance measurement.	MAFS.912.N-Q.1.3	
34.04 Demonstrate frame selection considering customer and frame characteristics.		
34.05 Select correct frame and bridge size.		SC.912.N.1.1
34.06 Verify prescription information.		SC.912.N.1.1
34.07 Perform frame adjustment and alignment.		
34.08 Perform frame repairs.		
34.09 Identify occupational eyewear and special purpose frames.		SC.912.N.1.1
35.0 Demonstrate and perform basic skills relating to lenses--The students will be able to:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
35.01 Use a manual lensometer.	MAFS.912.N-Q.1.3	
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.	MAFS.912.N-Q.1.3	
35.04 Duplicate a pair of prescription eyeglasses.		
35.05 Calculate lens size.	MAFS.912.N-Q.1.3 MAFS.912.A-SSE.1.1	
35.06 Calculate decentration.	MAFS.912.N-Q.1.3 MAFS.912.A-SSE.1.1	
35.07 Perform special mountings-drill and groove procedures.		
35.08 Demonstrate knowledge of lens tinting.		
35.09 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.	MAFS.912.N-Q.1.3	
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.	MAFS.912.N-Q.1.3	SC.912.N.1.1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.	LAFS.1112.SL.2.6	
37.09 Demonstrate insertion and removal techniques of contact lenses.		
37.010 Use keratometer.	MAFS.912.N-Q.1.3	
37.011 Demonstrate knowledge of frame repair.		

## 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.

### 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.

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## **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**

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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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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)	31-9099 Healthcare Support Workers, All Other 43-6013 Medical Secretaries

**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 consisting of four courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	8417281	Health Unit Coordinator 1	REG NURSE 7 G MED RECTEC 7G TEC MED !7 G 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)*

**Academic Alignment Table**

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.



Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8417281	22/87 25%	26/80 33%	6/83 7%	25/69 36%	5/67 7%	23/70 33%	22/69 32%	7/82 9%	21/66 32%	7/74 9%	24/72 33%
8417282	19/87 24%	19/80 24%	0/83 0%	19/69 28%	0/67 0%	19/70 27%	19/69 28%	0/82 0%	14/66 21%	0/74 0%	19/72 26%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8417281	11/67 16%	15/75 20%	8/54 15%	7/46 15%	7/45 16%	7/45 16%	7/45 16%
8417282	8/67 12%	14/75 19%	8/54 15%	5/46 11%	5/45 11%	5/45 11%	5/45 11%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

**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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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 of 2  
**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.

**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>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
28.0	Use oral and written communication skills in creating, expressing, and interpreting information and ideas. -- The student will be able to:		SC.912.N.1.1 SC.912.N.1.6
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.	LAFS.910.L.3.6 LAFS.910.L.2.3 LAFS.1112.L.3.6 LAFS.1112.L.2.3	
30.02	Spell, pronounce and define medical terms, as related to health unit coordinator.	LAFS.910.L.3.4c,d LAFS.1112.L.3.4c,d	
30.03	Relate medical terminology to the body systems.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
30.04	Identify and define standard abbreviations and medical symbols.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
30.05	Identify apothecary and metric systems.	MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
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.	LAFS.910.W.4.10 LAFS.1112.W.4.10	
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:		SC.912.N.1.3 SC.912.N.1.4 SC.912.N.1.6 SC.912.N.1.7
32.01	Demonstrate knowledge of common software applications relevant to the role of the health unit coordinator.	LAFS.910.RI.2.4 LAFS.910.L.1.2 LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.1112.RI.2.4 LAFS.1112.L.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8	
32.02	Prepare, label, and add forms to chart.		
32.03	Record non-clinical admission data on unit records.	LAFS.910.L.1.2 LAFS.1112.L.1.2 MAFS.912.N-Q.1.1	
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 of 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.

**Abbreviations:**

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

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
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.	LAFS.910.RI.2.4 LAFS.1112.RI.2.4	
36.02	Prioritize orders for transcription.	LAFS.910.W.2.6 LAFS.910.L.3.6 LAFS.1112.W.2. LAFS.1112.L.3.6	
36.03	Prepare and route requisitions manually or via computer.	LAFS.910.RI.2.4 LAFS.910.L.1.2	

		LAFS.910.L.3.6 LAFS.1112.RI.2.4 LAFS.1112.L.1.2; LAFS.1112.L.3.6	
36.04	Arrange for ordered consultations.	LAFS.910.SL.2.6 LAFS.1112.SL.2.6	
36.05	Schedule patients' treatments or therapy with other hospital departments.	LAFS.910.RI.2.4 LAFS.910.L.1.2 LAFS.910.L.2.6 LAFS.910.SL.2.6 LAFS.1112.RI.2.4 LAFS.1112.L.1.2 LAFS.1112.L.2.6 LAFS.1112.SL.2.6	
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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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. The Health Science Core must be taken by all students (secondary, postsecondary adult and postsecondary vocational) planning to complete any Health Science program. Once successfully completed, the core does not need to be repeated at any instructional level.

**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 seven courses and two occupational completion points.

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	8418210	Pharmacy Technician 1	PHARMACY 7 G	1 credit	31-9099	3	
B	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)*

## Academic Alignment Tables

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8418210	17/87 20%	21/80 26%	33/83 40%	17/69 25%	32/67 48%	18/70 26%	15/69 22%	30/82 37%	22/66 33%	36/74 49%	16/72 22%
8418220	3/87 3%	6/80 8%	26/83 31%	6/69 9%	24/67 36%	8/70 11%	2/69 3%	25/82 30%	8/66 12%	29/74 39%	4/72 6%

8418230	25/87 29%	27/80 34%	3/83 4%	28/69 41%	5/67 7%	25/70 36%	25/69 36%	3/82 4%	22/66 33%	5/74 7%	27/72 38%
8418240	26/87 30%	20/80 25%	4/83 5%	26/69 38%	#	20/70 29%	21/69 30%	4/82 5%	14/66 21%	7/74 9%	20/72 28%
8418250	8/87 9%	7/80 9%	6/83 7%	5/69 7%	4/67 6%	7/70 10%	1/69 1%	4/82 5%	7/66 11%	9/74 12%	7/72 10%
8418260	11/87 13%	4/80 5%	10/83 12%	6/69 9%	3/67 4%	7/70 10%	7/69 10%	5/82 6%	5/66 8%	8/74 11%	5/72 7%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8418210	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 29%	25/45 56%	25/45 56%
8418220	16/67 24%	8/75 11%	16/54 30%	8/46 17%	8/45 18%	#	#
8418230	12/67 18%	17/75 23%	8/54 15%	#	#	9/45 20%	9/45 20%
8418240	8/67 12%	14/75 19%	8/54 15%	#	#	2/45 4%	2/45 4%
8418250	#	#	#	#	#	2/45 4%	2/45 4%
8418260	2/67 3%	2/75 3%	#	#	#	2/45 4%	2/45 4%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

### **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.

**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 onto OCP B.

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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
01.0 Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:		SC.912.L.16.10
01.01 Identify the basic components of the health care delivery system including public, private, government and non-profit.	LAFS.910.RI.1.1 LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.02 Identify common methods of payment for healthcare services.	LAFS.910.RI.1.1 LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.03 Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.	LAFS.910.W.1.2 LAFS.910.SL.1.2 LAFS.910.SL.2.4 LAFS.910.SL.2.6 LAFS.1112.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.3	
01.04 Describe the composition and functions of a healthcare team.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.W.1.2 LAFS.1112.W.3.7	
01.05 Identify the general roles and responsibilities of the individual members of the healthcare team.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.3.7 LAFS.1112.W.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.1	
01.06 Identify the roles and responsibilities of the consumer within the healthcare delivery system.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.07 Identify characteristics of effective teams.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.08 Recognize methods for building positive team relationships.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.RI.1.1	
01.09 Analyze attributes and attitudes of an effective leader.	LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.10 Recognize factors and situations that may lead to conflict.	LAFS.910.SL.1.1 LAFS.910.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.11 Demonstrate effective techniques for managing team conflict.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.SL.2.4 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.12 Describe factors that influence the current delivery system of healthcare.	LAFS.910.RI.2.4 LAFS.910.SL.2.4 LAFS.1112.RI.1.1 LAFS.1112.RI.2.4 LAFS.1112.SL.2.4	
01.13 Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.	LAFS.910.W.2.5 LAFS.910.W.3.8 LAFS.1112.W.2.5 LAFS.1112.W.3.8 LAFS.1112.RI.1.1 LAFS.1112.SL.1.3 LAFS.1112.SL.2.4	
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:		SC.912.N.1.1
02.01 Develop basic speaking and active listening skills.	LAFS.910.SL.1.1 LAFS.910.SL.2.4 LAFS.910.SL.2.6 LAFS.1112.SL.1.1 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.L.1.1	
02.02 Develop basic observational skills and related documentation strategies in written and oral form.	LAFS.910.SL.2.4 LAFS.910.RI.3.7 LAFS.910.W.3.9	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.W.2.4 LAFS.910.SL.2.4 LAFS.910.SL.2.6 LAFS.1112.SL1.1 LAFS.1112.SL.2.4 LAFS.1112.RI.3.7 LAFS.1112.W.3.9 LAFS.1112.W.2.4 LAFS.1112.L.1.1	
02.03 Identify characteristics of successful and unsuccessful communication including communication styles and barriers.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
02.04 Respond to verbal and non-verbal cues.	LAFS.910.SL.1.1 LAFS.1112.SL1.1 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
02.05 Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.	LAFS.910.L.1.1 LAFS.910.L.1.2 LAFS.910.W.2.4 LAFS.1112.L.1.1 LAFS.1112.L.1.2 LAFS.1112.W.2.4 LAFS.1112.SL.1.1	
02.06 Use appropriate medical terminology and abbreviations.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
02.07 Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.	LAFS.1112.SL1.1 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
02.08 Recognize the importance of patient/client educations regarding healthcare.	LAFS.1112.L.1.1 LAFS.1112.SL1.1 LAFS.1112.SL.1.3	
02.09 Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.	LAFS.910.SL.2.6 LAFS.1112.SL.2.6 LAFS.1112.W.2.5	
02.10 Analyze elements of communication using a sender-receiver model.	LAFS.910.SL.1.1d	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.1.1d LAFS.1112.W.2.5 LAFS.1112.RI.1.1	
02.11 Distinguish between and report subjective and objective information.	LAFS.1112.RI.1.1 LAFS.1112.SL.1.1d LAFS.1112.SL.2.4	
02.12 Report relevant information in order of occurrence.	LAFS.910.W.1.2d LAFS.910.SL.2.4 LAFS.1112.W.1.2d LAFS.1112.SL.2.4 LAFS.1112.RI.1.3	
03.0 Demonstrate legal and ethical responsibilities. – The student will be able to:		SC.912.L.16.10 SC.912.N.1.1
03.01 Discuss the legal framework of the healthcare occupations including scope of practice legislation.	LAFS.910.SL.1.1a,b LAFS.910.SL.1.2 LAFS.1112.SL.1.1a,b,d LAFS.1112.SL.1.2 LAFS.1112.W.3.9b	
03.02 Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.	LAFS.910.SL.1.1a,b LAFS.910.SL.1.2 LAFS.1112.SL.1.1a,b LAFS.1112.SL.1.2 LAFS.1112.W.3.9b	
03.03 Demonstrate procedures for accurate documentation and record keeping.	LAFS.1112.W.2.6	
03.04 Interpret healthcare facility policy and procedures.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2 LAFS.1112.RI.3.8	
03.05 Explain the “Patient’s Bill of Rights”.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.RI.3.8 LAFS.1112.SL.1.1a LAFS.1112.SL.2.4	
03.06 Identify standards of the Health insurance Portability and Accountability Act (HIPAA).	LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2	
03.07 Describe advance directives.	LAFS.910.W.1.2d LAFS.1112.W.1.2d	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.11112.RI.1.1 LAFS.1112.L.3.6	
03.08 Describe informed consent.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.1112.RI.1.1 LAFS.1112.L.3.6	
03.09 Explain the laws governing harassment, labor and employment.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a LAFS.1112.SL.1.2	
03.10 Differentiate between legal and ethical issues in healthcare.	LAFS.910.RI.3.8 LAFS.1112.SL.1.2 LAFS.1112.RI.3.8	
03.11 Describe a code of ethics consistent with the healthcare occupation.	LAFS.910.W.1.2d LAFS.1112.RI.1.2 LAFS.1112.W.1.2d	
03.12 Identify and compare personal, professional, and organizational ethics.	LAFS.1112.RI.1.3	
03.13 Recognize the limits of authority and responsibility of health care workers including legislated scope of practice	LAFS.1112.RI.1.1	
03.14 Recognize and report illegal and/or unethical practices of healthcare workers.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
03.15 Recognize and report abuse including domestic violence and neglect.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
03.16 Distinguish among the five schedules of controlled substances.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
04.0 Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:		SC.912.L.14.46 SC.912.L.14.52 SC.912.L.18.3 SC.912.L.18.4 SC.912.N.2.2 SC.912.N.2.3 SC.912.N.4.2
04.01 Describe strategies for prevention of diseases including health screenings and examinations.	LAFS.910.W.1.3 LAFS.910.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.SL.2.5 LAFS.910.SL.2.6 LAFS.1112.W.1.3 LAFS.1112.SL.2.4 LAFS.1112.SL.2.5 LAFS.1112.RI.1.1	
04.02 Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.RI.3.7 LAFS.1112.SL.1.2	
04.03 Identify psychological reactions to illness including defense mechanisms.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.RI.3.7 LAFS.1112.SL.1.2	
04.04 Identify complementary and alternative health practices.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.RI.3.7 LAFS.1112.SL.1.2	
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.	LAFS.1112.SL.1.1c	
04.06 Explain the basic concepts of positive self-image, wellness and stress.	LAFS.1112.SL.1.1c	
04.07 Develop a wellness and stress control plan that can be used in personal and professional life.	LAFS.1112.W.1.2 LAFS.1112.W.2.4	
04.08 Explore and utilize the U.S. Department of Agriculture’s MyPlate food guide.	LAFS.1112.RI.3.8	
04.09 Recognize the steps in the grief process.		
05.0 Recognize and practice safety and security procedures. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.6
05.01 Recognize safe and unsafe working conditions and report safety hazards.	LAFS.1112.W.4.10	
05.02 Demonstrate the safe use of medical equipment.	LAFS.1112.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
05.03 Explain and apply the theory of root- cause analysis	LAFS.1112.SL.2.6	
05.04 Identify and describe methods in medical error reduction and prevention in the various healthcare settings.	LAFS.1112.RI.1.1	
05.05 Identify and practice security procedures for medical supplies and equipment.	LAFS.1112.RI.3.8	
05.06 Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).	LAFS.1112.SL.2.4	
05.07 Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols and labels.	LAFS.1112.RI.3.7	
05.08 Demonstrate proper body mechanics and ergonomics.	LAFS.1112.SL.2.4	
05.09 Demonstrate the procedure for properly identifying patients.	LAFS.1112.SL.2.4	
05.10 Demonstrate procedures for the safe transport and transfer of patients.	LAFS.1112.SL.2.4	
05.11 Describe fire, safety, disaster and evacuations procedures.	LAFS.1112.L.1.1 LAFS.1112.RI.1.1	
05.12 Discuss The Joint Commissions patient safety goals.	LAFS.1112.RI.3.7	
06.0 Recognize and respond to emergency situations. – The student will be able to:		SC.912.N.1.1
06.01 Monitor and record vital signs.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3 MAFS.912.S-ID.1.1 MAFS.912.S-IC.2.6	
06.02 Describe legal parameters relating to the administration of emergency care.	LAFS.1112.L.1.1 LAFS.1112.RI.3.8	
06.03 Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.	LAFS.1112.RI.1.1 LAFS.1112.RI.3.7 LAFS.1112.L.3.6 LAFS.1112.SL.1.2	
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:		SC.912.L.14.6 SC.912.L.14.52 SC.912.L.17.6 SC.912.L.17.14 SC.912.L.17.16

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
07.01 Define principles of infection control including standard and transmission based precautions.	LAFS.1112.L.3.4a, c	
07.02 Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.	LAFS.1112L.3.4d LAFS.1112.SL.2.4	
07.03 Demonstrate knowledge of surgical asepsis.	LAFS.1112L.3.4d LAFS.1112.SL.2.4	
07.04 Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.	LAFS.1112.RI.3.8 LAFS.1112.SL.2.4	
08.0 Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:		SC.912.N.1.1
08.01 Describe technology applications in healthcare.	LAFS.1112.SL.1.2	
08.02 Define terms and demonstrate basic computer skills.	LAFS.1112.L.3.6	
08.03 Recognize technology applications in healthcare.		
08.04 Interpret information from electronic medical documents.	LAFS.1112.SL.2.5 MAFS.912.S-IC.2.6	
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).	LAFS.1112.L.2.3 LAFS.1112.SL.2.6	
09.03 Identify documents that may be required when applying for a job.		
09.04 Write an appropriate resume.	LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.W.3.8	
09.05 Conduct a job search.	LAFS.1112.W.3.8	
09.06 Complete a job application form correctly.	LAFS.1112.W.2.5 LAFS.1112.W.2.6	
09.07 Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.	LAFS.1112.W.3.9b	
09.08 Recognize levels of education, credentialing requirements, employment	LAFS.1112.W.3.9b	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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).	LAFS.1112.W.3.8	
10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS. – The student will be able to:		SC.912.L.14.6 SC.912.L.14.52
10.01 Recognize emerging diseases and disorders	MAFS.912.S-IC.1.1 MAFS.912.S-ID.2.5 MAFS.912.S-ID.3.9	
10.02 Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.	LAFS.1112.RI.1.2 LAFS.1112.RI.3.7	
10.03 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.	LAFS.1112.W.3.7	
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.	LAFS.1112.RI.1.1  MAFS.912.S-IC.1.1 MAFS.912.S-IC.2.6	
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.	LAFS.1112.RI.3.8	
10.06 Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.	LAFS.1112.RI.3.8	
11.0 Apply basic math and science skills. – The student will be able to:		SC.912.N.1.1
11.01 Draw, read, and report on graphs, charts and tables.	MAFS.912.S-ID.1.1 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6 MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
11.02 Measure time, temperature, distance, capacity, and mass/weight.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
11.03 Make, use and convert using both traditional and metric units.	MAFS.912.N-Q.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
11.04 Make estimations and approximations and judge the reasonableness of the result.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
11.05 Convert from regular to 24 hour time.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
11.06 Demonstrate ability to evaluate and draw conclusions.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3 LAFS.1112.W.3.7	
11.07 Organize and communicate the results obtained by observation and experimentation.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3 LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
11.08 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
11.09 Calculate ratios.		
12.0 Practice human relation skills. -- The student will be able to:		SC.912.N.2.2 SC.912.N.2.4 SC.912.N.2.5 SC.912.N.3.1 SC.912.N.3.2 SC.912.N.3.5
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.		



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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 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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
14.0 Identify medical and legal considerations in various pharmacy setting. -- The student will be able to:		SC.912.L.16.10 SC.912.L.17.13 SC.912.L.17.14 SC.912.L.17.16 SC.912.L.17.20 SC.912.N.2.4 SC.912.N.4.1 SC.912.N.4.2
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.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
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.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
14.04 Explain the legal requirements for accurate pharmacy documentation and recordkeeping.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
14.05 Demonstrate an understanding of HIPAA in pharmacy practice pertaining to the ethical and legal considerations.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
14.06 Convey an understanding of the patient’s Bill of Rights as it relates to pharmacy practice.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
14.07 Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	

14.08	Differentiate between controlled substance schedules (CI-CV) and their applicable regulations.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
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.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
14.10	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
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:		SC.912.L.17.13 SC.912.L.17.14 SC.912.N.2.4
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.	LAFS.910.SL.1.2	
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.	LAFS.910.SL.1.1C	
15.10	Demonstrate the knowledge of systems used in maintaining pharmacy records.	LAFS.910.W.2.6	
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:		SC.912.L.14.7 SC.912.L.14.49 SC.912.L.14.52 SC.912.L.14.53

		SC.912.L.17.13 SC.912.L.17.14 SC.912.N.1.3 SC.912.N.1.7 SC.912.N.2.4 SC.912.N.2.5 SC.912.P.8.7 SC.912.P.8.13 SC.912.P.12.12
16.01	Define the major classifications of pharmaceuticals.	LAFS.910.L.3.6
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.	LAFS.910.L.3.4C LAFS.910.L.3.6
16.03	Utilize pharmacy reference manuals and web sites.	
16.04	Apply knowledge of trade names, and generic name equivalents.	LAFS.910.W.3.8

**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.

**Abbreviations:**

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

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
17.0	Demonstrate knowledge of inventory management. -- The student will be able to:		SC.912.L.17.14 SC.912.N.1.1
17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies, including the Florida Pedigree Law.	LAFS.1112.RI.3.7	
17.02	Maintain controlled substance inventory.	LAFS.1112.RI.3.7	
17.03	Apply knowledge of pharmacy business math to prescription pricing systems.	LAFS.1112.W.2.4 LAFS.1112.W.2.6	
17.04	Maintain stock inventory, communicate shortages, and seek solutions to maintain continuity of patient care.	LAFS.1112.SL.1.2	
17.05	Create electronic purchase orders.	LAFS.1112.SL.2.4	
17.06	Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.	LAFS.1112.W.3.7 LAFS.1112.SL.2.6	
17.07	Convey an understanding of Investigational Drugs, Risk Evaluation and Mitigation Strategies (REMS), off label indications, and emerging drug therapy.	LAFS.1112.W.3.7 LAFS.1112.SL.2.6	
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:		SC.912.N.1.1 SC.912.N.2.4 SC.912.N.2.5 SC.912.P.8.9
18.01	Convey an understanding of United States Pharmacopeia (USP) 795 standards.	LAFS.1112.RI.3.7	

18.02	Convert measurements within the apothecary, avoirdupois, household and metric systems.	MAFS.912.N-Q.1.1	
18.03	Perform common pharmaceutical calculations.	MAFS.912.S-ID.1.3 MAFS.912.N-Q.1.1 MAFS.912.A-REI.3.6 MAFS.912.-S-MD.1.3	
18.04	Identify common pharmaceutical weighing equipment.		
18.05	Identify common pharmaceutical volume measurement equipment.	LAFS.1112.L.3.4C MAFS.912.N-Q.1.3	
18.06	Demonstrate the technique of preparing common pharmaceutical compounds.	LAFS.1112.W.1.3A,B,C,E MAFS.912.A-REI.3.6	
18.07	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to the preparation of non-sterile products.		

Florida Department of Education  
Student Performance Standards

**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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
19.0 Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to the human physiology. -- The student will be able to:		SC.912.L.14.26 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.36 SC.912.L.14.39 SC.912.L.14.42 SC.912.L.14.46 SC.912.L.14.49 SC.912.L.15.15 SC.912.L.17.20 SC.912.P.8.2 SC.912.P.8.4 SC.912.P.8.5 SC.912.P.8.7 SC.912.P.8.8 SC.912.P.10.5 SC.912.P.12.12
19.01 Describe electrolyte balances and imbalances.	LAFS.1112.W.1.2A-F	
19.02 Relate the general sources, classes, indications, mechanisms of actions, routes of administration, side effects, and various types of drug interactions.	LAFS.1112.W.2.4 LAFS.1112.RI.1.3	

19.03 Demonstrate an understanding of common adult doses of medications, durations of common therapies, and respective contraindications, including the Beers Criteria.	LAFS.1112.RI.3.7 LAFS.1112.W.2.4 LAFS.1112.W.1.2B	
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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
20.0 Prepare and deliver medications. -- The student will be able to:		SC.912.L.14.26 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.36 SC.912.L.14.39 SC.912.L.14.42 SC.912.L.14.46 SC.912.L.14.49 SC.912.L.17.13 SC.912.L.17.14 SC.912.L.17.16 SC.912.L.17.20 SC.912.N.1.1 SC.912.N.1.3

		SC.912.N.1.7 SC.912.N.2.4 SC.912.P.10.15 SC.912.P.12.2 SC.912.P.12.3
20.01	Read and prepare medication orders correctly.	LAFS.1112.W.2.6 LAFS.1112.W.2.4 MAFS.912.A-REI.3.6
20.02	Demonstrate institutional pharmacy dispensing processes.	
20.03	Compare all new orders with medications listed on profiles while noting any changes.	LAFS.1112.W.2.6 LAFS.1112.W.2.4
20.04	Utilize special precautions in the preparation of medications for pediatric patients.	LAFS.1112.RI.1.3
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.	LAFS.1112.RI.3.7
20.07	Collect data from medication administration record.	LAFS.1112.RI.3.7
20.08	Demonstrate use of automated medication dispensing equipment.	LAFS.1112.RI.3.7
21.0	Repackage unit dose medications. -- The student will be able to:	SC.912.L.17.17 SC.912.N.1.1 SC.912.N.2.4 SC.912.N.2.5 SC.912.P.8.8 SC.912.P.8.10 SC.912.P.10.15 SC.912.P.12.2 SC.912.P.12.3
21.01	Locate correct stock container.	
21.02	Operate unit dose packaging equipment.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3
21.03	Measure, count, and place individual dose in appropriate containers.	LAFS.1112.RI.1.2
21.04	Understand precautions used when packaging unit dose hazardous drugs.	LAFS.1112.RI.1.2
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.	LAFS.1112.L.2.3

Florida Department of Education  
Student Performance Standards

**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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
22.0 Prepare United States Pharmacopeia (USP) 797 and USP 800 sterile products. -- The student will be able to:		SC.912.L.14.6 SC.912.L.14.26 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.33 SC.912.L.14.36 SC.912.L.14.39 SC.912.L.14.42 SC.912.L.14.46 SC.912.L.15.15 SC.912.L.16.7 SC.912.L.16.8 SC.912.L.16.10 SC.912.L.16.14 SC.912.L.17.13 SC.912.L.17.14 SC.912.L.17.15 SC.912.L.18.4 SC.912.L.18.8 SC.912.N.1.1 SC.912.N.2.4 SC.912.N.2.5 SC.912.P.8.7

		SC.912.P.8.9 SC.912.P.10.15 SC.912.P.12.3 SC.912.P.12.12
22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.	LAFS.1112.RI.3.8
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.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3, MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6
22.05	Understand common institutional drug names, dosages, and incompatibilities.	LAFS.1112.W.3.7
22.06	Reconstitute parenteral medications.	MAFS.912.N-Q.1.3 MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6
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.	LAFS.1112.RI.1.3 MAFS.912.F-IF.2.6
22.08	Demonstrate aseptic technique to withdraw medication from an ampule using filter needle/straw.	LAFS.1112.RI.1.3
22.09	Prepare parenteral solutions using proper aseptic technique.	LAFS.1112.RI.3.7 LAFS.1112.SL.1.2  MAFS.912.N-Q.1.3 MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6
22.10	Understand the preparation of Total Parenteral Nutrition (TPN) solutions.	LAFS.1112.RI.3.7 LAFS.1112.SL.1.2 MAFS.912.N-Q.1.3 MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6
22.11	Understand the preparation of chemotherapeutic agents using proper safety techniques.	LAFS.1112.RI.3.7 LAFS.1112.SL.1.2 MAFS.912.N-Q.1.3 MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6
22.12	Understand the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier	LAFS.1112.RI.3.7 LAFS.1112.SL.1.2

isolator.		
22.13 Place label on IV solution container and record appropriately.	LAFS.1112.RI.1.2	
22.14 Perform quality control check of completed product.	LAFS.1112.W.4.10	
22.15 Convey an understanding of the proper storage and disposal requirements of reconstituted and non-reconstituted IV solutions.	LAFS.1112.RI.3.7	
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**

**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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of nine courses and two occupational completion points.

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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.**

## Academic Alignment Table

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8418310	18/87 21%	16/80 20%	33/83 40%	13/69 19%	28/67 42%	15/70 21%	15/69 22%	29/82 35%	18/66 27%	31/74 42%	12/72 17%
8418320	36/87 41%	5/80 6%	25/83 30%	5/69 7%	22/67 33%	2/70 3%	5/69 7%	22/82 27%	5/66 8%	22/74 30%	4/72 6%
8418330	38/87 44%	27/80 34%	7/83 8%	27/69 39%	6/67 9%	24/70 34%	27/69 39%	5/82 6%	22/66 33%	6/74 8%	26/72 36%
8418340	19/87 22%	19/80 24%	#	19/69 28%	#	19/70 27%	19/69 28%	#	14/66 21%	#	19/72 26%
8418350	34/87 39%	2/80 3%	5/83 6%	3/69 4%	2/67 3%	1/70 1%	1/69 1%	1/82 1%	1/66 2%	3/74 4%	2/72 3%
8418380	7/87 8%	5/80 6%	3/83 4%	5/69 7%	3/67 4%	2/70 3%	5/69 7%	3/82 4%	5/66 8%	3/74 4%	4/72 6%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8418310	25/67 37%	15/75 20%	18/54 33%	20/46 43%	20/45 44%	26/45 58%	26/45 58%
8418320	19/67 28%	9/75 12%	15/54 28%	8/46 17%	8/45 18%	8/45 18%	8/45 18%
8418330	17/67 25%	18/75 24%	10/54 19%	11/46 24%	11/45 24%	11/45 24%	11/45 24%
8418340	8/67 12%	14/75 19%	8/54 15%	#	#	#	#
8418350	4/67 6%	2/75 3%	1/54 2%	4/46 9%	4/45 9%	4/45 9%	4/45 9%
8418380	8/67 12%	2/75 3%	1/54 2%	14/46 30%	14/45 31%	12/45 27%	12/45 27%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

### **Florida Standards for Technical Subjects**

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

**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.

**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 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.
- 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 procures, HIV/AIDS, computer literacy, basic communication skills, legal & ethical nursing concepts, principles of infection control and aseptic technique.

**Abbreviations:**

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

<b>Practical Nursing Foundations 1A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
01.0	Demonstrate knowledge of the healthcare delivery system and health occupations. - The student will be able to:		SC.912.L.16.10
01.01	Identify the basic components of the healthcare delivery system including public, private, government and non-profit.	LAFS.910.RI.1.1 LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.02	Identify common methods of payment for healthcare services.	LAFS.910.RI.1.1 LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.03	Describe the various types of healthcare providers and the range of services available including resources to victims of domestic violence.	LAFS.910.W.1.2 LAFS.910.SL.1.2 LAFS.910.SL.2.4 LAFS.910.SL.2.6 LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.3	

<b>Practical Nursing Foundations 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
01.04 Describe the composition and functions of a healthcare team.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.W.1.2 LAFS.1112.W.3.7	
01.05 Identify the general roles and responsibilities of the individual members of the healthcare team.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.3.7 LAFS.1112.W.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.1	
01.06 Identify the roles and responsibilities of the consumer within the healthcare delivery system.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.07 Identify characteristics of effective teams.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.1112.W.1.2 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.08 Recognize methods for building positive team relationships.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.RI.1.1	
01.09 Analyze attributes and attitudes of an effective leader.	LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2 LAFS.1112.RI.1.3	
01.10 Recognize factors and situations that may lead to conflict.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.RI.1.1	



<b>Practical Nursing Foundations 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.RI.1.3	
01.11 Demonstrate effective techniques for managing team conflict.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.SL.2.4 LAFS.1112.RI.1.1 LAFS.1112.RI.1.3	
01.12 Describe factors that influence the current delivery system of healthcare.	LAFS.910.RI.2.4 LAFS.910.SL.2.4 LAFS.1112.RI.1.1 LAFS.1112.RI.2.4 LAFS.1112.SL.2.4	
01.13 Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.	LAFS.910.W.2.5 LAFS.910.W.3.8 LAFS.1112.W.2.5 LAFS.1112.W.3.8 LAFS.1112.RI.1.1 LAFS.1112.SL.1.3 LAFS.1112.SL.2.4	
02.0 Recognize and practice safety, security, and emergency procedures. - The student will be able to:		SC.912.N.1.1 SC.912.N.1.6
02.01 Recognize safe and unsafe working conditions and report safety hazards.	LAFS.1112.W.4.10	
02.02 Demonstrate the safe use of medical equipment.	LAFS.1112.SL.1.1	
02.03 Explain and apply the theory of root- cause analysis.	LAFS.1112.SL.2.6	
02.04 Identify and describe methods in medical error reduction and prevention in the various healthcare settings.	LAFS.1112.RI.1.1	
02.05 Identify and practice security procedures for medical supplies and equipment.	LAFS.1112.RI.3.8	
02.06 Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations including standard precautions.	LAFS.1112.SL.2.4	
02.07 Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.	LAFS.1112.RI.3.7	

<b>Practical Nursing Foundations 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
02.08 Demonstrate proper body mechanics and ergonomics.	LAFS.1112.SL.2.4	
02.09 Demonstrate the procedure for properly identifying patients.	LAFS.1112.SL.2.4	
02.10 Demonstrate procedures for the safe transport and transfer of patients.	LAFS.1112.SL.2.4	
02.11 Describe fire, safety, disaster and evacuations procedures.	LAFS.1112.L.1.1 LAFS.1112.RI.1.1	
02.12 Discuss The Joint commission patient safety goals and any other applicable accrediting/regulatory agency guidelines.	LAFS.1112.RI.3.7	
02.13 Describe legal parameters relating to the administration of emergency care.	LAFS.1112.L.1.1 LAFS.1112.RI.3.8	
02.14 Obtain and maintain training or certification on cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.	LAFS.1112.RI.1.1 LAFS.1112.RI.3.7 LAFS.1112.L.3.6 LAFS.1112.SL.1.2	
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 including Hepatitis B.		
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 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.		

<b>Practical Nursing Foundations 1A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.	LAFS.910.SL.1.1 LAFS.910.SL.1.2 LAFS.910.SL.1.3 LAFS.1112.SL.1.1 LAFS.1112.SL.1.2 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
05.02	Respond to verbal and non-verbal cues.	LAFS.910.SL.1.1 LAFS.1112.SL.1.1 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
05.03	Use appropriate medical terminology and abbreviations.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
05.04	Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.	LAFS.1112.SL.1.1 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
05.05	Receive and give oral report of patient's status.	LAFS.910.SL.2.4 LAFS.910.L.3.6 LAFS.1112.SL.2.4 LAFS.1112.L.3.6	
05.06	Report and record objective and subjective pertinent observations.	LAFS.1112.RI.1.1 LAFS.1112.SL.1.1d LAFS.1112.SL.2.4	
05.07	Maintain current documentation.	LAFS.910.W.4.10 LAFS.1112.W.10	
05.08	Document changes in patient behavior and mental awareness.	LAFS.910.W.4.10 LAFS.1112.W.4.10	
05.09	Obtain specified data from patient and family.	LAFS.910.SL.1.1c LAFS.910.RI.3.7 LAFS.1112.SL.1.1A,C LAFS.1112.RI.3.7	
05.10	Define and explain the steps in the nursing process and the role of the licensed practical nurse in that process.	LAFS.910.RI.1.3 LAFS.910.SL.2.4 LAFS.1112.RI.1.3 LAFS.1112.SL.2.4	
05.11	Utilize nursing principles to assist with the patient's plan of care.	LAFS.910.SL.1.1c LAFS.910.RI.3.7	

<b>Practical Nursing Foundations 1A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
		LAFS.1112.SL.1.1D,C LAFS.1112.L.1.1 LAFS.1112.RI.3.7	
06.0	Demonstrate legal and ethical responsibilities specific to the nursing profession. – The student will be able to:		SC.912.L.16.10 SC.912.N.1.1
06.01	Explain the “Patient’s Bill of Rights”.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.RI.3.8 LAFS.1112.SL.1.1a LAFS.1112.SL.2.4	
06.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).	LAFS.910.RI.1.2 LAFS.1112.RI.1.1 LAFS.1112.RI.1.2	
06.03	Describe advance directives.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.1112.RI.1.1 LAFS.1112.L.3.6	
06.04	Describe informed consent.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.1112.RI.1.1 LAFS.1112.L.3.6	
06.05	Recognize and report abuse including domestic violence and neglect.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
06.06	Identify the components of the Nurse Practice Act.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
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		SC.912.L.14.6

<b>Practical Nursing Foundations 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
be able to:		SC.912.L.14.52 SC.912.L.17.6 SC.912.L.17.14 SC.912.L.17.16
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.	LAFS.1112.SL.2.5	
07.02 Set up isolation unit using proper personal protective equipment (PPE) for all types of isolation including donning and removing PPE appropriately.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
07.03 Follow isolation procedure with food tray, garments, and other materials.	LAFS.1112.SL.2.5	
07.04 Collect specimen from patient in isolation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
07.05 Identify common nosocomial infections and their prevention and treatment.		
07.06 Identify emergent communicable diseases and their prevention and treatment.		
07.07 Apply interventions to break each chain of infection.		
07.08 Discuss immunity and the role of immunizations.		
07.09 Discuss nursing responsibilities related to biological exposures.		
08.0 Perform aseptic techniques. – The student will be able to:		SC.912.L.14.52
08.01 Apply principles of medical and surgical asepsis.		
08.02 Apply and remove sterile gloves and gown.		
08.03 Apply sterile dressing.		
08.04 Open sterile equipment and supplies.		
08.05 Maintain sterile field.		
08.06 Clean and disinfect equipment.		

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.

**Abbreviations:**

FS-M/LA = Florida Standards for Math/Language Arts

NGSSS-Sci = Next Generation Sunshine State Standards for Science

<b>Practical Nursing Foundations 1B</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</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, record and report vital signs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
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.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
09.03	Provide primary nursing care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 LAFS.1112.RI.1.2 LAFS.1112.W.1.2B	
09.04	Perform patient hygiene care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
09.05	Assist patient with activities of Daily Living (ADL) including: 09.05.01 Dressing 09.05.02 Meals	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

<b>Practical Nursing Foundations 1B</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
09.05.03	Bowel and bladder training		
09.05.04	Perineal 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	Provide care for eye glasses, prosthetic eyes, and contact lens.		
10.0	Provide patient-centered care for the geriatric population. - The student will be able to:		
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.	LAFS.1112.W.3.8	
10.02	Identify barriers for older adults in receiving, understanding, and giving of information.		
10.03	Use valid and reliable assessment made by registered nurse to guide nursing practice for older adults.		
10.04	Recognize living environments as it relates to functional, physical, cognitive, psychological, and social needs of older adults.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
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 made by registered nurse.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
10.06	Identify actual or potential mistreatment (physical, mental or financial abuse, and/or self-neglect) in older adults and refer 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).		

<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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, nursing homes) 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. .	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.SL.1.1B LAFS.1112.RI.1.2	
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.	LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.RI.1.3 LAFS.1112.W.2.6 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
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 (Alzheimer's or Dementia).	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
10.21 Recognize and respond appropriately to symptoms of common diseases, including dementia, depression/suicide and Alzheimer's.	LAFS.1112.RI.3.7	
10.22 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions, cognitively impaired (dementia)).	LAFS.1112.SL.2.5	
10.23 Demonstrate awareness of common behaviors in drug use and abuse in the elderly.		
10.24 Report concerns to the nurse related to drug use and abuse in the elderly patient.		
10.25 Identify components of the grief process as it relates the geriatric patient.		
11.0 Assist with restorative (rehabilitative) activities. – The student will be able to:		
11.01 List the purposes of restorative (rehabilitation) program.	LAFS.910.W.1.2e LAFS.910.W.2.4	



<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.W.1.2e LAFS.1112.W.2.4 LAFS.1112.W.2.6	
11.02 Assist patient with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
11.03 Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
12.0 Demonstrate organizational functions following the patient plan of care. – The student will be able to:		
12.01 Organize patient-care assignments.	LAFS.1112.W.4.1	
12.02 Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
13.0 Describe the structure and function of the human body. – The student will be able to:		SC.912.L.12.44 SC.912.L.14.11 SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.25 SC.912.L.14.26 SC.912.L.14.27 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.37 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.L.14.41

<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
		SC.912.L.14.43 SC.912.L.14.44 SC.912.L.14.45 SC.912.L.14.46 SC.912.L.14.48 SC.912.L.14.49 SC.912.L.14.50 SC.912.L.14.51 SC.912.L.16.13
13.01 Describe the relationships of body systems in providing patient care.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.02 Describe the structure and function of the respiratory system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.03 Describe the structure and function of the cardio-vascular system including lymph and immune response.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	

<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
13.04 Describe the structure and function of the muscular-skeletal system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10 LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.05 Describe the structure and function of the nervous, skin, and sensory systems.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.06 Describe the structure and function of the reproductive system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.07 Describe the structure and function of the urinary system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4	

<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.08 Describe the structure and function of the digestive system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
13.09 Describe the structure and function of the endocrine system.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
14.0 Apply principles of nutrition as it relates to practical nursing scope of practice. – The student will be able to:		SC.912.L.18.1 SC.912.L.18.2 SC.912.L.18.4
14.01 Explore and utilize the U.S. Department of Agriculture’s MyPlate food guide.	LAFS.1112.RI.3.8	
14.02 Explain regional, cultural, and religious food references.	LAFS.910.W.1.2c,d,e LAFS.910.SL.2.4 LAFS.1112.SL.1.2 LAFS.1112.W.1.2c,d,e LAFS.1112.SL.2.4	
14.03 Prepare a basic food plan.	LAFS.1112.RI.3.8 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
14.04 Demonstrate knowledge of the need for thickened liquids and fluid consistency.		

<b>Practical Nursing Foundations 1B</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
14.05 Identify methods of maintaining fluid balance including forcing and restricting fluids.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
14.06 Monitor and document nutritional intake.		
14.07 Assist patient with and maintain therapeutic diets.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
14.08 Describe the nutrients, their sources and significance in promoting health.		
14.09 List factors which must be considered when purchasing food.	LAFS.910.W.4.10 LAFS.910.W.1.1c LAFS.910.W.1.2e LAFS.1112.W.4.10 LAFS.1112.W.1.1c LAFS.1112.W.1.2e	
14.10 List factors which must be considered when storing food safely.	LAFS.910.W.4.10 LAFS.910.W.1.1c LAFS.910.W.1.2e LAFS.1112.W.4.10 LAFS.1112.W.1.1c LAFS.1112.W.1.2e	
14.11 Identify methods of safe food preparation.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	

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.

**Abbreviations:**

FS-M/LA = Florida Standards for Math/Language Arts

NGSSS-Sci = Next Generation Sunshine State Standards for Science

<b>Practical Nursing Foundations 2A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
15.0	Describe human growth and development across the lifespan. – The student will be able to:		SC.912.L.16.13
15.01	Describe characteristics of growth and development from conception to birth.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
15.02	Describe characteristics of growth and development from birth through preschool.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4	

<b>Practical Nursing Foundations 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.W.4.10	
15.03 Describe characteristics of growth and development from school age through adolescence.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
15.04 Describe characteristics of growth and development of the adult through the life span.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.910.W.1.2a,d,e LAFS.910.W.2.4 LAFS.910.W.4.10 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
15.05 Identify components of the grief process across the lifespan.	LAFS.910.SL.1.1a LAFS.910.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.W.3.8	
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:		SC.912.L.14.14 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.33 SC.912.L.14.44 SC.912.L.14.45 SC.912.L.14.46 SC.912.L.14.48 SC.912.L.14.49 SC.912.L.14.51 SC.912.L.14.52 SC.912.N.1.1 SC.912.P.10.18

<b>Practical Nursing Foundations 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.		
16.06 Perform clean and sterile dressing changing procedures.		
16.07 Insert urinary catheter.		
16.08 Obtain specimen from patient with indwelling catheter.		
16.09 Remove retention catheter.		
16.10 Demonstrate how to assist with physical examination.		
16.11 Assist patient with diagnostic procedures.		
16.12 Irrigate wound.		
16.13 Apply pelvic belt for traction.		
16.14 Apply cervical collar.		
16.15 Apply orthopedic devices including binders, braces and splints.		
16.16 Apply anti-embolic hose and sequential compression devices.		
16.17 Care for patient in skin, skeletal traction and external fixators.		
16.18 Clean tong/pin site.		
16.19 Describe and demonstrate how to monitor chest drainage system.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
16.20 Perform naso-oral suction.		
16.21 Perform tracheostomy care.		



<b>Practical Nursing Foundations 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
16.22 Demonstrate how to instruct patient in breathing exercises.		
16.23 Set up vaporizer/humidifier.		
16.24 Administer and maintain oxygen.		
16.25 Collect timed urine specimen.		
16.26 Collect clean-catch (midstream-voided) urine specimen.		
16.27 Test urine using point of care testing procedures.		
16.28 Irrigate urinary catheter.		
16.29 Demonstrate how to maintain continuous urinary bladder irrigation.		
16.30 Change ostomy appliance.		
16.31 Connect nasogastric tube to suction machine.		
16.32 Remove nasogastric tube.		
16.33 Administer enteral feeding.		
16.34 Give enema.		
16.35 Test stool for occult blood.		
16.36 Irrigate nasogastric tube.		
16.37 Irrigate oral cavity.		
16.38 Irrigate colostomy.		
16.39 Demonstrate how to maintain enteral feeding tubes.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
16.40 Perform neurological checks.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
16.41 Logroll patient.		
16.42 Irrigate ear.		
16.43 Irrigate eye.		

<b>Practical Nursing Foundations 2A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
16.44	Irrigate vaginal canal.		
16.45	Obtain and test a drop of blood for glucose monitoring.		
16.46	Perform calculation and adjust IV flow rate.	MAFS.912.A.REI.2.3 MAFS.912.A-SSE.1.1	
16.47	Observe intravenous infusion and report signs of adverse reactions.		
16.48	Inspect insertion site, change dressing, and remove IV needle or catheter from peripheral veins.		
16.49	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:		SC.912.L.14.20 SC.912.L.14.50 SC.912.L.14.51
17.01	Identify controlled substances and associated legal and safety issues.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3 MAFS.912.A.REI.2.3 MAFS.912.A-SSE.1.1	
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 ear drops.		

<b>Practical Nursing Foundations 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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 self-administration of medications; reinforce teaching by the RN 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.	LAFS.910.W.1.2d LAFS.910.W.2.4 LAFS.910.W.2.6 LAFS.1112.W.1.2d LAFS.1112.W.2.4 LAFS.910.W.2.6	
17.22 Document administration of medication and patient's response on medical record.	LAFS.910.W.1.2d LAFS.1112.W.1.2d	
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.	LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.1112.W.3,8 LAFS.1112.SL.1.1a	

<b>Practical Nursing Foundations 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
18.05 Differentiate between mental health and mental illness.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
18.06 Recognize signs and symptoms of the various mental health disorders.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
18.07 Discuss treatment modalities for the various mental health disorders.	LAFS.910.SL.1.1a LAFS.910.SL.2.4 LAFS.1112.SL.1.1a LAFS.1112.SL.2.4	
18.08 Recognize the signs and symptoms for potential suicide and homicidal ideations in the patient and initiate appropriate interventions.	LAFS.910.SL.1.1a LAFS.910.SL.1.1c LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a LAFS.1112.SL.1.1c LAFS.1112.RI.1.2	
18.09 Describe treatments and resources for the addicted client.	LAFS.910.RI.2.4 LAFS.910.W.3.8 LAFS.910.RI.1.2 LAFS.1112.RI.2.4 LAFS.1112.W.3.8 LAFS.910.RI.1.2	
18.10 Describe drug seeking behaviors and resources for potential risk of addiction.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4	
18.11 Identify an individual in crisis and describe appropriate interventions.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.910.SL.1.1c LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a LAFS.1112.SL.1.1c	
18.12 Describe the common personality traits in mental health disorders including addictive behaviors.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.910.SL.1.1c LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a LAFS.1112.SL.1.1c	
18.13 Correlate common psychological and developmental theories with both bio-, psycho-social components of health.		

<b>Practical Nursing Foundations 2A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
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	Apply cultural diversity related to spirituality.		
19.10	Identify education level.		
19.11	Discuss occupation ability.		
19.12	Provide resources financial safety and security.		
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 provider community resources for prenatal care.		
20.03	Apply knowledge into healthy parenting styles.		
20.04	Provide current immunization practices.		

<b>Practical Nursing Foundations 2A</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
20.05	Discuss healthy nutrition options and resources.		
20.06	Define abuse and neglect in relationships.		
20.07	Apply insight into safe housing environments/communities.		
20.08	Discuss school and family collaboration in education.		
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 social and financial risk factors related to the aging adult.		
21.05	Define safe housing strategies for senior living.		
21.06	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.

**Abbreviations:**

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

Medical Surgical Nursing 1A	FS-M/LA	NGSSS-Sci
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:		SC.912.L.14.11 SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.25 SC.912.L.14.26 SC.912.L.14.27 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.37



<b>Medical Surgical Nursing 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
		SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.L.14.41 SC.912.L.14.43 SC.912.L.14.44 SC.912.L.14.45 SC.912.L.14.46 SC.912.L.14.47 SC.912.L.14.48 SC.912.L.14.49 SC.912.L.14.50 SC.912.L.14.51 SC.912.L.14.52 SC.912.L.16.13 SC.912.N.1.1 SC.912.P.8.11 SC.912.P.8.12 SC.912.P.10.18
22.01 Identify signs and symptoms of disease/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
22.02 Identify diagnostic tests used in the treatment of diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
22.03 Identify medications used in the treatment of diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2	

Medical Surgical Nursing 1A	FS-M/LA	NGSSS-Sci
	LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
22.04 Identify nutritional needs of patients with diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
22.05 Identify the symptoms of acute/chronic psychological distress.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
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.	LAFS.910.SL.2.4 LAFS.910.SL.1.1a LAFS.1112.SL.2.4 LAFS.1112.SL.1.1a	
23.02 Perform a surgical prep.		

<b>Medical Surgical Nursing 1A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
23.03 Prepare patient for operating room.		
23.04 Provide post-operative care.		
23.05 Reinforce post-operative discharge teaching provided by the RN.	LAFS.910.SL.2.4 LAFS.910.SL.1.1a LAFS.1112.SL.2.4 LAFS.1112.SL.1.1a	

**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.

**Abbreviations:**

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

Medical Surgical Nursing 2A	FS-M/LA	NGSSS-Sci
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:		SC.912.L.14.11 SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.15 SC.912.L.14.16 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.21 SC.912.L.14.25 SC.912.L.14.26 SC.912.L.14.27 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.37

<b>Medical Surgical Nursing 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
		SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.L.14.41 SC.912.L.14.43 SC.912.L.14.44 SC.912.L.14.45 SC.912.L.14.46 SC.912.L.14.47 SC.912.L.14.48 SC.912.L.14.49 SC.912.L.14.50 SC.912.L.14.51 SC.912.L.14.52 SC.912.L.16.13 SC.912.N.1.1 SC.912.P.8.11 SC.912.P.8.12 SC.912.P.10.18
24.01 Identify signs and symptoms of disease/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
24.02 Identify diagnostic tests used in the treatment of diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
24.03 Identify medications used in the treatment of diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2	

<b>Medical Surgical Nursing 2A</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
24.04 Identify nutritional needs of patients with diseases/disorders of the body systems.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
24.05 Identify the symptoms of acute/chronic psychological distress.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
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.

<b><u>Comprehensive Nursing and Transitional Skills</u></b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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:		SC.912.L.14.38 SC.912.L.14.41
25.01	Describe prenatal care and normal development of the fetus.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
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.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
25.06	Recognize the importance of monitoring fetal heart rate.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
25.07	Recognize signs/symptoms of fetal distress.	LAFS.910.SL.1.1a LAFS.910.RI.1.2	

<b>Comprehensive Nursing and Transitional Skills</b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
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.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
25.11 Describe Apgar score.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6 MAFS.912.N-Q1.2	
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.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.A.SSE.1.1 MAFS.912.A.REI.2.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6b	
25.15 Demonstrate how to bathe infant.		

<b><u>Comprehensive Nursing and Transitional Skills</u></b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a	

<b><u>Comprehensive Nursing and Transitional Skills</u></b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
	LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
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.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
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.	LAFS.910.RI.1.2 LAFS.910.W.1.2a LAFS.910.L.3.6 LAFS.1112.RI.1.2 LAFS.1112.W.1.2a LAFS.1112.L.3.6	
28.03 Discuss the scope of practice of a Licensed Practical Nurse in a leadership/supervisory role.	LAFS.910.RI.1.2 LAFS.910.W.1.2a LAFS.910.L.3.6 LAFS.1112.RI.1.2 LAFS.1112.W.1.2a LAFS.1112.L.3.6	
28.04 Describe the role of the LPN in delegation to unlicensed personnel.	LAFS.910.RI.1.2 LAFS.910.W.1.2a LAFS.910.L.3.6 LAFS.1112.RI.1.2 LAFS.1112.W.1.2a LAFS.1112.L.3.6	
28.05 Describe the Florida Board of Nursing requirements for licensure renewal.	LAFS.910.RI.1.2 LAFS.910.W.1.2a LAFS.910.L.3.6 LAFS.1112.RI.1.2 LAFS.1112.W.1.2a LAFS.1112.L.3.6	

<b>Comprehensive Nursing and Transitional Skills</b>		<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
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.	LAFS.910.RI.1.2 LAFS.910.W.2a LAFS.910.W.3.8 LAFS.1112.RI.1.2 LAFS.1112.W.2a LAFS.1112.W.3.8	
28.09	Determine how to apply for membership in a professional organization.	LAFS.910.W.2.6 LAFS.1112.W.2.6	
28.10	Discuss benefits and responsibilities of the LPN in membership in a professional organization.	LAFS.910.RI.1.2 LAFS.910.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.SL.1.1a	
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.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	
29.04	Recognize the potential for violence in the workplace and describe methods of reducing that potential.	LAFS.910.SL.1.1a LAFS.910.RI.1.2 LAFS.910.W.3.8 LAFS.910.L.3.6 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2 LAFS.1112.W.3.8 LAFS.1112.L.3.6	

<b><u>Comprehensive Nursing and Transitional Skills</u></b>	<b>FS-M/LA</b>	<b>NGSSS-Sci</b>
29.05 Identify employment opportunities for licensed practical nurses.	LAFS.910.W.2.6 LAFS.1112.W.2.6	
29.06 Participate in interview skill development activities.	LAFS.910.SL.2.6 LAFS.910.SL.1.1c LAFS.1112.SL.2.6 LAFS.1112.SL.1.1c	
29.07 Complete letters of job application and resignation.	LAFS.910.W.1.2c,d,e LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.L.1.1 LAFS.910.L.1.2 LAFS.910.L.3.6 LAFS.1112.W.1.2c,d,e LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.L.1.1 LAFS.1112.L.1.2 LAFS.1112.L.3.6	
29.08 Complete a professional portfolio, including a resume.	LAFS.910.W.1.2c,d,e LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.L.1.1 LAFS.910.L.1.2 LAFS.910.L.3.6 LAFS.910.W.2.4 LAFS.910.W.3.7 LAFS.910.W.4.10 LAFS.1112.W.1.2c,d,e LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.L.1.1 LAFS.1112.L.1.2 LAFS.1112.L.3.6 LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.4.10	

## **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.

### **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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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)	31-9099 Healthcare Support Workers, All Other 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 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 consisting of three courses and two occupational completion points. The two credit core 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. 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 two courses in the core are:

- 8417100 - Health Science Anatomy and Physiology
- 8417110 - Health Science Foundations

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:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	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	
B	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)*

## Academic Alignment Tables

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth- Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
8417100	46/87 53%	6/80 8%	52/83 63%	7/69 10%	26/67 39%	8/70 11%	21/69 30%	34/82 41%	9/66 14%	29/74 39%	6/72 8%
8417110	17/87 20%	16/80 20%	32/83 39%	13/69 19%	28/67 42%	15/70 21%	14/69 20%	28/82 34%	18/66 27%	31/74 42%	12/72 17%
8427130	31/87 36%	26/80 33%	4/83 5%	23/69 33%	3/67 4%	25/70 36%	24/69 35%	2/82 2%	21/66 32%	2/74 3%	26/72 36%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8417100	21/67 31%	9/75 12%	18/54 33%	14/46 30%	14/45 31%	#	#
8417110	25/67 37%	15/75 20%	18/54 33%	22/46 48%	22/45 49%	25/45 56%	25/45 56%
8427130	8/67 12%	16/75 21%	8/54 15%	#	#	6/45 13%	6/45 13%

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# Alignment attempted, but no correlation to academic course

## Florida Standards for Technical Subjects

*Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.*

**Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program.**

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

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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.

## **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). These courses were previously titled Health Science 1 and Health Science 2. 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 points 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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
28.0 Describe the cardiovascular system. -- The student will be able to:		SC.912.L.14.6 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.49
28.01 Locate the heart and surrounding structures.	LAFS.1112.RI.3.7	
28.02 Diagram and label the parts of the heart and list the functions of each labeled part.	LAFS.1112.RI.3.7 LAFS.1112.W.2.4	
28.03 Trace the flow of blood through the cardiopulmonary system.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
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:		SC.912.L.16.10 SC.912.N.1.1
29.01 Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
29.02	Maintain a safe and efficient work environment.	LAFS.1112.SL.1.2	
29.03	Maintain EKG equipment so it will be safe and accurate.	LAFS.1112.SL.1.2	
29.04	Implement appropriate Joint Commission patient safety goals and adhere to HIPAA regulations regarding Protected Health Information (PHI).	LAFS.1112.SL.1.2	
30.0	Demonstrate knowledge of, apply and use medical instrumentation modalities. -- The student will be able to:		SC.912.L.14.37 SC.912.N.1.1 SC.912.P.10.20 SC.912.P.12.2 SC.912.P.12.9
30.01	Calibrate and maintain EKG equipment in the work environment.	LAFS.1112.SL.1.2	
30.02	Identify three types of lead systems standard/limb, augmented, and precordial/chest).	LAFS.1112.SL.2.5 LAFS.1112.RI.3.7	
30.03	State Einthoven's triangle.	LAFS.1112.SL.1.2	
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.	LAFS.1112.SL.1.2	
30.05	Identify artifacts and mechanical problems.	LAFS.1112.SL.2.5	
30.06	Perform a 3, 5, and 12 lead EKG.	LAFS.11.12.RI.3.7 LAFS.1112.SL.1.2	
30.07	Recognize normal sinus rhythm.	LAFS.1112.SL.2.5	
30.08	Report dysrhythmias that are not normal sinus rhythm.	LAFS.1112.RI.2.4 LAFS.1112.RI.3.7	
30.09	Recognize signs and symptoms of cardiopulmonary compromise on the EKG tracing and understand the importance of rapid reporting.	LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	
30.10	Verify accuracy of lead placement on the EKG.	LAFS.1112.SL.2.4	
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:		SC.912.N.1.1
31.01	Describe the physical and mental preparation of the patient for EKG testing.	LAFS.1112.W.2.4	
31.02	Identify patient and verify the requisition order.	LAFS.1112.W.2.4	
31.03	Prepare patient for cardiovascular diagnostic testing.	LAFS.1112.SL.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSS-Sci
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.	LAFS.1112.SL.2.4	
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.		
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:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.

### 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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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 consisting of four courses.

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 REG NURSE 7 G MED PROF 7 G PARAMEDIC @7 7G LAB TECH @7 7G PLTW HEALTH 7G	1 credit	3	EQ
8708120	Human Body Systems		1 credit	3	EQ
8708130	Medical Interventions		1 credit	3	EQ
8708140	Biomedical Innovation		1 credit	3	

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8708120	50/87 57%	16/80 20%	44/83 53%	13/69 19%	31/67 46%	12/70 17%	15/69 22%	34/82 41%	18/66 27%	35/74 47%	12/72 17%
8708130	44/87 51%	44/80 55%	24/83 29%	38/69 55%	11/67 16%	40/70 57%	47/69 68%	14/82 17%	38/66 58%	19/74 26%	37/72 51%
8708140	31/87 36%	33/80 41%	15/83 18%	30/69 43%	6/67 9%	35/70 50%	35/69 51%	7/82 9%	33/66 50%	9/74 12%	29/72 40%

\*\* Alignment pending review

# Alignment attempted, but no correlation to academic course

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
8708110	22/67 33%	14/75 19%	18/54 33%	15/46 33%	15/45 33%	#	#



8708120	30/67 45%	19/75 25%	21/54 39%	21/46 46%	21/45 47%	#	#
8708130	10/67 15%	21/75 28%	9/54 17%	#	#	13/45 29%	13/45 29%
8708140	10/67 15%	20/75 27%	8/54 15%	#	#	18/45 40%	18/45 40%

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1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
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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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
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:		SC.912.L.14.4 SC.912.N.2.1 SC.912.N.2.2 SC.912.N.3.1 SC.912.N.3.4
01.01 Develop a theory through evidence-based research and find a conclusion to a problem utilizing the scientific method.	LAFS.910.RI.2.4 LAFS.910.W.3.7	
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.	LAFS.910.W.3.7 LAFS.910.SL.1.1	
01.03 Practice and demonstrate how to properly and safely use a microscope.	LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.910.RI.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
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	LAFS.910.SL.1.1 LAFS.910.RI.3.9	
02.02 Explain common practices that could result in malpractice, liability and/or negligence.	LAFS.910.SL.1.1 LAFS.910.W.1.2	
02.03 Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).	LAFS.910.RI.1.1 LAFS.910.RI.3.9 LAFS.910.SL.1.1 LAFS.910.W.2.4	
02.04 Describe the purpose of Informed Consent from the patient and provider perspective.	LAFS.910.SL.1.1	
02.05 Differentiate between legal and ethical issues in healthcare.	LAFS.910.SL.1.1	
02.06 Evaluate and justify decisions based on ethical reasoning.	LAFS.910.SL.1.1 LAFS.910.RI.3.8	
02.07 Identify and explain personal and long-term consequences of unethical or illegal behaviors in the workplace.	LAFS.910.SL.1.1	HE.912.C.1.3
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:		SC.912.L.14.2 SC.912.L.14.4 SC.912.L.14.11 SC.912.L.14.13 SC.912.L.14.16 SC.912.L.14.20 SC.912.L.14.26 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.42 SC.912.L.14.44 SC.912.L.14.46 SC.912.L.14.51

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.L.14.52 SC.912.L.16.3
03.01 Identify the major body systems and their functions.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.RI.2.4	
03.02 Demonstrate an understanding of how body systems work together to maintain homeostasis.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.RI.2.4	
03.03 Identify and locate specific organs that comprise the major human body systems.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.RI.2.4	
03.04 Describe the general structure and function of each of these organs.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.RI.2.4	
03.05 Identify common diseases and conditions that can disrupt the functioning of cells, tissues and organs within the body.	LAFS.910.SL.1.1 LAFS.910.SL.2.4 LAFS.910.W.2.4 LAFS.910.RI.2.4 LAFS.910.L.3.4C,D	
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.	LAFS.910.RI.1.1 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
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.	LAFS.910.RI.1.1 LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.W.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.910.W.2.4	
04.06 Discuss how the use of medical terminology and the involvement of many medical professionals are vital to the investigation process.	LAFS.910.SL.1.1	
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.		
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:		SC.912.L.14.36 SC.912.L.14.37 SC.912.L.14.40 SC.912.L.14.52
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.	LAFS.910.SL.1.1	
06.02 Identify and describe the gross structures and functions of the heart.	LAFS.910.W.1.2 MAFS.912.G-GMD.2.4	
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.	LAFS.910.W.2.4	
06.04 Calculate heart rate as the number of beats per minute.	MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	
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.	LAFS.910.SL.1.1 MAFS.912.A-CED.1.1 MAFS.912.A-CED.1.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.F-LE.2.5	
06.06 Describe the flow of electricity through the heart and the result of this electrical pattern.	LAFS.910.SL.1.1. LAFS.910.W.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
06.07 Indicate how heart rate, blood pressure and EKG can be used to measure a person's medical condition.	LAFS.910.W.2.4 MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
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.	LAFS.910.SL.1.1B LAFS.910.W.1.2 LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8	
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:		SC.912.L.14.4 SC.912.L.14.11 SC.912.L.14.34
07.01 Explain that blood is a liquid connective tissue composed of erythrocytes, leukocytes and thrombocytes that are suspended in liquid plasma.	LAFS.910.W.2.4	
07.02 Compare and contrast the functions of erythrocytes, leukocytes, and thrombocytes.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
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:		SC.912.L.18.1 SC.912.L.18.2 SC.912.L.18.10 SC.912.P.8.2 SC.912.P.8.4 SC.912.P.8.6
08.01 Identify the different categories used in a food label and what they mean in relation of the nutrition of the body.	LAFS.910.SL.1.2A,B,D,E,F MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	HE.912.C.1.3
08.02 Compare and contrast the recommended daily values for food groups, minerals and vitamins.	LAFS.910.W.2.4 LAFS.910.SL.1.1 MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	
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.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
08.04 Describe the structure and function of atoms.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
08.05 Describe how homeostasis depends upon many different chemical reactions and large organic molecules.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
08.06 Describe the role of chemical bonding in chemical reactions and transfer of energy.	LAFS.910.W.2.4 LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
09.0 Describe how food provides nutrients for the body to help maintain homeostasis. – The student will be able to:		SC.912.L.18.1 SC.912.L.18.2 SC.912.L.18.3 SC.912.N.3.5 SC.912.P.8.2 SC.912.P.8.7
09.01 Describe the structure and function of macromolecules in relation to the breakdown of food and the human body.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
09.02 Differentiate between the four classes of macromolecules in terms of their structure and function and build a model of each.	LAFS.910.W.2.4	
09.03 Explain the role of chemical indicators in identifying chemical compounds.	LAFS.910.W.1.2 LAFS.910.SL.1.1	
09.04 Describe different foods that contain each kind of nutrients.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
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.	LAFS.910.W.2.4 LAFS.910.SL.1.1 LAFS.910.SL.2.4 LAFS.910.W.3.7 LAFS.910.W.3.8	
10.02 Summarize how insulin regulates the transfer of glucose into the body cells and its role as part of the feedback system.	LAFS.910.W.2.4 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.910.SL.1.1	
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.	LAFS.910.W.2.4 LAFS.910.W.3.7 LAFS.910.SL.1.1	
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.	LAFS.910.W.1.2 LAFS.910.W.3.7	
10.06 Describe healthy behaviors and actions that could help prevent the onset of Type 2 diabetes.	LAFS.910.W.2.4 LAFS.910.SL.1.1	HE.912.C.1.3
10.07 Investigate and describe the roles of Biomedical Sciences professions related to the treatment and prevention of Diabetes.		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
11.0	Investigate the role of DNA and Chromosomes in the human body. – The student will be able to:		SC.912.L.16.3 SC.912.L.16.9 SC.912.L.18.4
11.01	Describe the Structure and function of a chromosome.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
11.02	Describe the structure and function of deoxyribonucleic acid (DNA).	LAFS.910.W.2.4 LAFS.910.SL.1.1	
11.03	Explain the relationship between chromosomes, DNA and Genes.	LAFS.910.W.2.4 LAFS.910.SL.1.1 LAFS.910.W.3.7	
11.04	Explain the interactions between nucleotides using DNA models.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
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.	LAFS.910.W.1.2F LAFS.910.W.2.4 LAFS.910.SL.1.1	
11.06	Describe the importance of nucleotides in the process of creating protein molecules with the information from DNA.	LAFS.910.W.2.4, LAFS.910.SL.1.1	
11.07	Distinguish between the different levels of proteins and understand that a protein's shape can change depending on its environment.	LAFS.910.W.1.2F LAFS.910.W.2.4 LAFS.910.SL.1.1B,C	
11.08	Explain how the sequence of amino acids in a protein determines the protein's structure.	LAFS.910.W.2.4	
11.09	Demonstrate the appropriate laboratory methods to isolate DNA from plant and animal cells.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
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:		SC.912.L.16.8 SC.912.L.17.1
12.01	Describe and identify the difference between the appearance of normal and sickle cell blood using a microscope.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
12.02	Describe the function of hemoglobin found in erythrocytes.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
12.03	Demonstrate how changes to the structure of a protein can change its ability to work properly.	LAFS.910.W.2.4	
12.04	List the major symptoms and complications of sickle cell disease.	LAFS.910.W.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
		LAFS.910.W.3.7	
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.	LAFS.910.W.2.4 LAFS.910.W.3.7 MAFS.912.S-CP.1.5	
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:		SC.912.L.15.13 SC.912.L.15.15 SC.912.L.16.1 SC.912.L.16.2 SC.912.L.16.16 SC.912.L.16.17 SC.912.L.17.5
13.01	Describe that chromosomes each carry numerous genes that are passed along from parents to offspring through reproductive cells.	LAFS.910.SL.1.1 LAFS.910.W.2.4 MAFS.912.S-CP.2.8	HE.912.C.1.7
13.02	Identify and be able to use a karyotype to identify multiploidy and sex in an individual.	LAFS.910.W.2.4	
13.03	Compare and contrast between chromosomal and gene mutations.	LAFS.910.W.2.4 LAFS.910.W.3.7	
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.	LAFS.910.SL.1.1B	HE.912.C.1.7
13.05	Describe the process of meiosis.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
13.06	Explain how cell division results in the formation of haploid gametes.	LAFS.910.W.3.7	
13.07	Compare and contrast mitosis and meiosis and relate to the processes of sexual reproduction and their consequences for genetic variation.	LAFS.910.W.2.4 LAFS.910.W.3.7	
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.	LAFS.910.W.2.4 LAFS.910.W.3.7	
13.10	Explain how anemia and lack of energy in a cell are related.	LAFS.910.W.2.4 LAFS.910.W.3.7	
13.11	Use appropriate research techniques to obtain information on the symptoms and complications of the sickle cell trait and disease.	LAFS.910.W.2.4 LAFS.910.W.3.7	
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	LAFS.910.W.2.4 LAFS.910.SL.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
	offspring.	MAFS.912.SCP.2.8 MAFS.912.S-CP.2.7	
14.0	Examine how changes in chromosomes or genes can cause disease/chromosomal mutations. – The student will be able to:		SC.912.L.16.4
14.01	Define, identify and analyze karyotypes to determine multiploidy and sex.	LAFS.910.W.2.4	
14.02	Explain how karyotypes are used to diagnose certain medical conditions.	LAFS.910.W.2.4	
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.	LAFS.910.W.2.4	
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.	LAFS.910.W.2.4	
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:		SC.912.L.18.1 SC.912.L.18.3 SC.912.L.18.4
15.01	Explain that there are different types of lipid molecules and that they have different physical properties and functions.	LAFS.910.SL.1.1 LAFS.910.W.2.4 LAFS.910.W.3.7	
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.	LAFS.910.W.2.4 LAFS.910.W.3.7	
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.	LAFS.910.W.2.4 LAFS.910.W.3.7 LAFS.910.SL.2.4 LAFS.910.SL.2.5	
15.04	Describe how the measurement of these protein complexes affects a person's risk for cardiovascular disease.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
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.		HE.912.C.1.5
16.0	Describe molecular biological techniques for diagnosing diseases, specifically hypercholesterolemia. – The student will be able to:		SC.912.L.16.5 SC.912.L.16.6 SC.912.L.16.11 SC.912.L.16.12
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.	LAFS.910.W.2.4 LAFS.910.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
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.	LAFS.910.W.2.4	
16.03 Analyze the results of a gel electrophoresis to correctly diagnose the presence of the familial hypercholesterolemia mutation.	LAFS.910.W.1.2A, B, D, E, F MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
17.0 Demonstrate an understanding of bacteria as a cause for infectious diseases. – The student will be able to:		SC.912.L.14.52 SC.912.L.14.6
17.01 Identify the basic structures of a bacterial cell.		
17.02 Describe the epidemiology of different types of bacteria and why some cause disease while some do not.	LAFS.910.W.2.4 LAFS.910.W.3.7	
17.03 Classify bacteria by shape, metabolism and reaction to gram staining.	LAFS.910.W.2.4 LAFS.910.W.3.7	
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.	LAFS.910.W.2.4	
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.	LAFS.910.SL.2.4 LAFS.910.W.2.4 LAFS.910.W.2.6 LAFS.910.W.3.7 MAFS.912.S-CP.1.5	SC.912.L.14.6 HE.912.C.1.3 HE.912.C.1.5

**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.

**Abbreviations:**

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 NGSSS-Sci = Next Generation Sunshine State Standards for Science

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
18.0 Investigate the anatomical and physiological commonalities in the human body. -- The student will be able to:		SC.912.L.14.4 SC.912.L.14.16 SC.912.L.14.20 SC.912.L.14.26 SC.912.L.14.28 SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.32 SC.912.L.14.33 SC.912.L.14.42 SC.912.L.14.44 SC.912.L.14.46 SC.912.L.14.51 SC.912.L.14.52

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.L.16.13 SC.912.N.1.4
18.01 List the major organs within each human body system and the functions of the different human body systems.	LAFS.910.SL.1.1 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.L.2.4A,C,D	HE.912.C.1.5
18.02 Describe how multiple body systems are interconnected.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
18.03 Describe how the interconnections and interactions of multiple body systems are necessary for maintaining homeostasis.	LAFS.910.W.1.2F LAFS.910.W.3.8 LAFS.910.SL.1.1A,C,D	
18.04 Demonstrate the correct usage of directional terms and regional terms to identify locations of the human body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
18.05 Identify key directional terms on a model of the human body.	LAFS.910.L.3.4 LAFS.910.SL.1.1B LAFS.910.W.1.2F	
18.06 Apply knowledge of human body systems to indicate how disease can impact function in another system.	LAFS.910.W.1.2F LAFS.910.SL.1.1	
19.0 Analyze the individual differences in body systems in tissues and cells. – The student will be able to:		SC.912.L.14.11 SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.14 SC.912.L.14.15 SC.912.L.16.2
19.01 Describe the differences in the appearance of epithelial and connective tissues.	LAFS.910.L.3.4 LAFS.910.RI.3.7	
19.02 Explain the basic structure and function of the skeletal system.	LAFS.910.L.3.4 LAFS.910.W.2.4	
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.	LAFS.910.W.1.2F MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.1.1	
19.05 Use mathematical calculations to predict height from the length of a bone.	MAFS.912.S-ID.3.7 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.G-MG.1.3 MAFS.912.F-IF.2.6 MAFS.912.F-LE.2.5	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
20.0 Investigate the significance of DNA in relation to individual identity. – The student will be able to:		SC.912.L.16.9 SC.912.L.16.10 SC.912.N.1.5 SC.912.N.1.7 SC.912.N.4.2
20.01 Explain how restriction enzymes cut DNA.	LAFS.910.SL.1.1 LAFS.910.W.3.8	
20.02 Explain how gel electrophoresis separates DNA fragments by size.	LAFS.910.SL.1.1 LAFS.910.W.1.2B MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
20.03 Analyze gel electrophoresis results.	LAFS.910.W.1.2F	
20.04 Define biometrics and through research create an argument related to ethical issues associated with it.	LAFS.910.L.3.4 LAFS.910.SL.1.3	
20.05 Describe the way in which characteristics such as fingerprints, facial features and retinal patterns can be used to establish identity.	LAFS.910.SL.1.1 LAFS.910.W.3.8	
20.06 Design a comprehensive security plan for a real-world situation using biometrics.	LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.RI.3.7 LAFS.910.L.1.1	
20.07 Understand the roles and responsibilities of a forensic anthropologist and a DNA analyst.	LAFS.910.RI.2.5 LAFS.910.RI.2.6 LAFS.910.SL.2.4 LAFS.910.W.1.2B	
21.0 Investigate the role the brain plays in the communication system of the human body. – The student will be able to:		SC.912.L. 14.11 SC.912.L. 14.21 SC.912.L. 14.22 SC.912.L. 14.24 SC.912.L. 14.25 SC.912.L. 14.26 SC.912.L. 14.27 SC.912.L. 14.28
21.01 Describe the general structure and function of the central nervous system.	LAFS.910.L.3.4 LAFS.910.W.2.4	
21.02 Interpret how a malfunction in the nervous system would impact the function of the human body.	LAFS.910.W.1.2F LAFS.910.SL.1.1B	
21.03 Identify the regions of the brain responsible for specific actions, emotions, or functions of human body.	LAFS.910.W.1.2B LAFS.910.W.3.7 LAFS.910.L.3.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
21.04	Differentiate the regions of the brain that are responsible for basic life functions.	LAFS.910.W.1.2B,F LAFS.910.SL1.1A	
22.0	Determine how electrical communication works in the body. – The student will be able to:		SC.912.L.14.11 SC.912.L.14.21 SC.912.L.14.22 SC.912.L.14.24 SC.912.L.14.25 SC.912.L.16.10 SC.912.N.1.1
22.01	Explain the basics of how electrical signals are created and transmitted in the human body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
22.02	Explain the roles of ions in creating electrical impulses in the human body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
22.03	Explain how neurotransmitters help propagate electrical impulses.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
22.04	Describe neuron structure and function.	LAFS.910.L.3.4 LAFS.910.W.3.7	
22.04.01	Explain the ascending and descending pathways of the CNS.	LAFS.910.SL.1.1	
22.05	Analyze how reflexes impact reaction time.	LAFS.910.SL.1.1 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.1.2 MAFS.912.S-IC.2.5 MAFS.912.S-IC.2.6	
22.06	Demonstrate an understanding of how nervous system disorder impacts quality of life.	LAFS.910.SL.1.1B LAFS.910.L.3.4 LAFS.910.W.1.2F	
22.07	Research the roles and responsibilities of biomedical professionals who can improve the quality of life for those coping with nervous system dysfunction.	LAFS.910.W.3.8 LAFS.910.RI.1.1	
22.08	Using data acquisition software to investigate the relationship between reflexes and reaction time.	LAFS.910.W.1.2 LAFS.910.W.3.7 LAFS.910.L.3.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.1.2 MAFS.912.S-IC.2.5 MAFS.912.S-IC.2.6	
23.0	Determine how chemical communication works in the body. – The student will be able to:		SC.912.L.14.29 SC.912.L.14.30

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.L.14.31 SC.912.L.14.32 SC.912.N.1.1 SC.912.N.1.6
23.01 Explain the basics of how hormones interact with target cells.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
23.02 Explain the difference between endocrine and exocrine glands as well as protein/peptide and steroid hormones.	LAFS.910.L.3.4 LAFS.910.W.1.2D,F	
23.03 Using research, interpret the symptoms and physical characteristics of a patient to determine an endocrine system pathology.	LAFS.910.L.3.4 LAFS.910.W.1.2F	
23.04 Explain in general how hormones contribute to maintain homeostasis.	LAFS.910.L.3.4 LAFS.910.W.1.2F	
24.0 Investigate how the human body responds to external stimuli. – The student will be able to:		SC.912.L.14.50
24.01 Describe the structures and function of the eye.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
24.02 Describe how the eye and the brain work together to produce vision.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
24.03 Explain and demonstrate visual perception, including visual acuity, depth perception, peripheral vision, color vision, and the interpretation of optical illusions.	LAFS.910.L.3.4 LAFS.910.W.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
24.04 Utilize a Snellen chart to determine an individual's vision acuity.	LAFS.910.L.3.4 LAFS.910.W.2.4	
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.	LAFS.910.W.2.4 LAFS.910.SL.1.2	
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:		SC.912.L.14.46 SC.912.L.18.10 SC.912.L.18.11 SC.912.L.14.34 SC.912.L.14.43 SC.912.L.14.44 SC.912.L.14.46 SC.912.L.17.13

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
			SC.912.N.1.1 SC.912.N.3.5
25.01	Describe the human body systems that absorb process and distribute oxygen, water, and food.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
25.02	Describe the structure and function of organs in the human digestive system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
25.03	Explain how energy is stored and released in ATP through the process of hydrolysis and phosphorylation.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
25.04	Assess overall health through analysis of calories consumed and calories expended in daily activities.	LAFS.910.RI.1.2	
25.05	Explain the structure and function of, enzymes and co enzymes and how they all work together.	LAFS.910.W.2.4	
25.06	Explain the role of enzymes in maintaining homeostasis in the body.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
25.07	Demonstrate an understanding of both lock and key models and induced fit models of enzyme function.	LAFS.910.W.2.4 LAFS.910.W.3.7 LAFS.910.RI.2.4 LAFS.910.L.3.4C MAFS.912.N-Q.1.2	
25.08	Interpret enzyme function in the digestive system through laboratory experiments.	LAFS.910.W.1.2F LAFS.910.SL.1.1B	
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.	LAFS.910.SL.1.1B LAFS.910.L.3.4 LAFS.910.W.1.2	
26.0	Describe the role of oxygen in cellular respiration and macromolecule metabolism. – The student will be able to:		SC.912.L.14.43 SC.912.L.14.44
26.01	Describe the structure and function of the human respiratory system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
26.02	Explain the process of gas exchange in the lungs and identify where in the lungs gas exchange occurs.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
26.03	Explain that the blood is the primary transport for oxygen and carbon dioxide in the body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
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.	LAFS.910.W.1.2F LAFS.910.SL.1.1B MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
26.05 Analyze the differences of various medications used to treat respiratory dysfunction and describe the various pharmacological routes of administration for each.	MAFS.912.G-MG.1.2 LAFS.910.W.3.7 LAFS.910.L.3.4 LAFS.910.W.1.2B MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.G-MG.1.2	
26.05.01 Utilize pharmacological abbreviations to analyze prescriptions.		
26.06 Explain the roles and responsibilities of a respiratory therapist.	LAFS.910.W.3.7	
27.0 Describe the role of water in maintaining homeostasis. – The student will be able to:		SC.912.L.14.47 SC.912.L.14.48 SC.912.L.18.12 SC.912.N.3.1 SC.912.N.3.5
27.01 Describe the structure and function of the human urinary system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
27.02 Describe the structure and function of the kidney.	LAFS.910.L.3.4 LAFS.910.W.3.7 MAFS.912.G-GMD.2.4	
27.03 Describe and illustrate the movement of fluids and ions in and out of the various parts of the nephron.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
27.04 Explain the role of ADH (anti-diuretic hormone) and Aldosterone on fluid and electrolyte balance in the body.	LAFS.910.SL.1.1 LAFS.910.W.1.2F	
27.05 Compare and contrast the composition of blood and urine.		
27.06 Build a model of the urinary system.	MAFS.912.G-GMD.2.4	
27.07 Analyze the results of a urinalysis test and apply the results to determine dysfunction of the urinary system.	LAFS.910.L.3.4 LAFS.910.W.1.2F	HE.912.C.1.5
27.08 Identify the components of a urinalysis test and determine when a urinalysis should be utilized.	LAFS.910.W.1.2F LAFS.910.RI.2.4	
28.0 Demonstrate an understanding of how joints directly contribute to the movement of the human body. – The student will be able to:		SC.912.L.14.12 SC.912.N.1.1
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.	LAFS.910.L.3.4 LAFS.910.SL.1.1 LAFS.910.RI.2.4	
28.02 Describe the normal motion of various joints in the body using correct terminology.	LAFS.910.L.3.4 LAFS.910.SL.1.1 LAFS.910.RI.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
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.	LAFS.910.W.1.2A,B MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
28.04 Compare the structure of a cow elbow to a human elbow.	LAFS.910.W.1.2F	
28.05 Discuss differences in an individual's range of motion and the reason for these differences.	LAFS.910.SL.1.1 LAFS.910.W.4.10	
28.06 Discuss ways to improve joint flexibility such as stretching and other lifestyle modifications.	LAFS.910.SL.1.1 LAFS.910.W.4.10	
29.0 Demonstrate an understanding of how muscles directly contribute to the movement of the human body. – The student will be able to:		SC.912.L.14.16 SC.912.L.14.17 SC.912.L.14.18 SC.912.L.14.19 SC.912.L.14.20 SC.912.L.14.22 SC.912.L.14.23
29.01 Describe the structure and function of the three types of muscle tissue.	LAFS.910.L.3.4 LAFS.910.SL.1.1 LAFS.910.RI.2.4	
29.02 Identify specific muscles of the body and understand how muscles are named.		
29.03 Describe the steps of muscle contraction.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
29.04 Explain the sliding filament mechanism of muscle contraction.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
29.05 Explain the connection between nerves and muscle.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
29.06 Interpret muscle function by examining structure and attachment to bone.	LAFS.910.W.1.2F	
29.07 Build a model of a muscle group.	MAFS.912.G-GMD.2.4	
29.08 Explain why rigor mortis occurs using the concepts of muscle contraction.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
29.09 Determine the role of calcium in muscle contraction.	LAFS.910.W.1.2A,B	
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:		SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.36 SC.912.L.14.37 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.40 SC.912.N.1.1

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
30.01	Explain the relationship between the heart and lungs and the path of blood flow through these organs.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
30.02	Demonstrate how to take a pulse and explain the steps of how to take blood pressure.	LAFS.910.L.3.4	
30.03	Identify major arteries and veins and specify the body region each supplies.	LAFS.910.L.3.4 LAFS.910.W.2.4	
30.04	Interpret ankle brachial index (ABI) to determine possible blood vessel blockages.	LAFS.910.W.1.2F LAFS.910.SL.1.1B MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
30.05	Understand the relationship between the amounts of blood pumped by the heart through analysis of cardiac output values.	LAFS.910.W.1.2F LAFS.910.RI.2.4 MAFS.912.S-IC.2.6 MAFS.912.S-IC.1.2 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.F-LE.2.5 MAFS.912.A-CED.1.1 MAFS.912.A-CED.1.4	
30.06	Investigate peripheral artery disease related to patient health through the analysis of patient symptoms and diagnostic testing.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1B	HE.912.C.1.5
30.07	Explain the structure and function of veins and explain how varicose veins form.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
30.08	Build a model of the major circulatory routes.	MAFS.912.G-GMD.2.4	
30.09	Analyze risks for cardiovascular disease.	LAFS.910.W.1.3A,E	HE.912.C.1.5
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:		SC.912.L.18.5 SC.912.L.18.6 SC.912.L.18.8 SC.912.L.18.10 SC.912.N.1.1
31.01	Explain the human body's ability to generate ATP for the specific time period needed to fuel itself.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1	
31.02	Assess muscle fatigue through interpretation of EMG and grip strength.	LAFS.910.W.1.2 MAFS.912.F-IF.2.4 MAFS.912.F-IF.3.7e	
31.03	Design an experiment to test and analyze muscle fatigue.	LAFS.910.W.3.8	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.910.L.2.4	
31.04 Describe how the major body systems respond to exercise.	LAFS.910.W.3.7 LAFS.910.L.3.4	
31.05 Understand how a training plan is designed for a fictional client, incorporating the specific health situation of the client.	LAFS.910.W.3.7 LAFS.910.L.3.4	
31.06 Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.	LAFS.910.L.3.4 LAFS.910.W.2.4	
32.0 Describe the structure and function of the integumentary system. – The student will be able to:		SC.912.L.14.51 SC.912.N.1.1
32.01 Classify the various degrees of burns and determine which layers of skin have been damaged for each.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.02 Explain how burns impact the normal function of the skin and how the damage disrupts homeostasis in the body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.03 Explain how the body senses and responds to pain.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.04 Explain why pain is necessary to human survival.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
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.	LAFS.910.W.1.2F LAFS.910.W.1.3A,E	
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:		SC.912.L.14.12 SC.912.L.14.13 SC.912.L.14.14 SC.912.L.14.15 SC.912.N.1.1
33.01 Describe and compare the structure and function of compact and spongy bone.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
33.02 Describe the different types of bone fractures.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
33.03 Identify bone fractures on x-rays and describe possible damage to internal organs.	LAFS.910.L.3.4 LAFS.910.W.2.4	
33.04 Describe the roles of calcitonin and parathyroid hormone in the human body	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
33.05 Describe the stages of bone remodeling.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
33.06 Identify lifestyle choices that affect development and maintenance of healthy bones.	LAFS.910.L.3.4 LAFS.910.W.2.4	
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:		SC.912.L.14.42 SC.912.L.14.52
34.01 Describe the structure and function of the lymphatic and immune system.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
34.02 Describe the roles of antigens and antibodies.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
34.03 Explain the role of blood cells in specific immunity.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
34.04 Understand how a pedigree can assist in determining blood types in a family.	LAFS.910.W.1.2F LAFS.910.RI.2.4 MAFS.912.S-CP.2.8 MAFS.912.S-CP.2.7	
34.05 Interpret data on antibody concentrations after an infection.	LAFS.910.W.1.2F MAFS.912.S-ID.1.1 MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	
34.06 Determine potential blood donors for a transfusion through the analysis of blood types and Rh compatibility.	LAFS.910.W.1.2 LAFS.910.RI.2.4	
35.0 Analyze how various external factors require body systems to work together to maintain health and homeostasis. – The student will be able to:		SC.912.N.1.1
35.01 Describe how various body systems respond to extreme external changes in the external environment.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1	HE.912.C.1.3
35.02 Explain how body systems work together to maintain homeostasis and complete basic functions.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
35.03 Understand how initial symptoms of an illness can lead to diagnosis and treatment.	LAFS.910.W.3.8 LAFS.910.L.3.4	
35.04 Evaluate objective data to create a patient case study.	LAFS.910.L.3.4 LAFS.910.SL.1.2 LAFS.910.W.1.2 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
35.05 Understand that different diseases require different medical interventions.	LAFS.910.W.3.4	HE.912.C.1.5

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci/HE
	LAFS.910.W.3.7 LAFS.910.SL.1.1B LAFS.910.SL.2.4 LAFS.910.L.3.4B	
35.06 Research the role of various medical professionals who will diagnose and treat a fictional patient.	LAFS.910.W.3.8 LAFS.910.L.3.4	

**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.

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
36.0 Investigate the variety of interventions involved in the prevention, diagnosis and treatment of infectious disease. – The student will be able to:		SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.9 SC.912.L.16.10 SC.912.L.16.11 SC.912.L.17.1 SC.912.N.4.2
36.01 Research various medical interventions and explain how these interventions help prevent, diagnose, and treat disease.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.SL.1.1	
36.02 Define bioinformatics and explore how it is used in the collection, classification, storage, and analysis of biochemical and biological information.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.1.1	
36.03 Explain how bacteria can be identified using DNA sequencing.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
36.04 Investigate the roles of diagnostic tests for infectious diseases.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
36.05 Graphically organize connections between individuals in a fictitious disease outbreak.	LAFS.1112.W.2.4	
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.	LAFS.1112.W.2.4 LAFS.1112.SL.1.1B	
37.0 Explore the factors that contribute to the effectiveness of antibiotics against infectious diseases. – The student will be able to:		SC.912.L.14.52 SC.912.L.16.1 SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.9 SC.912.L.16.10
37.01 Analyze and describe the structure of a bacterial cell.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4	
37.02 Investigate how antibiotics disrupt the physiological pathways that bacteria need to survive.	LAFS.1112.W.3.7 LAFS.1112.W.2.4	
37.03 Explain how bacteria use adaptations to gain resistance to antibiotics.	LAFS.1112.W.3.7 LAFS.1112.SL.1.1B LAFS.1112.SL.2.4	
37.04 Demonstrate one of the pathways through which bacterial cells transfer genes.	LAFS.1112.W.3.7 LAFS.1112.W.2.4	
37.05 Use a model to simulate the effects of antibiotics on the population of bacteria during an infection.	LAFS.1112.SL.1.1 LAFS.1112.W.2.4	
38.0 Investigate the pathology of hearing loss as a detrimental effect of infectious disease. – The student will be able to:		SC.912.L.14.5 SC.912.L.16.10 SC.912.N.1.3 SC.912.N.1.4 SC.912.N.1.6 SC.912.N.1.7 SC.912.N.3.5 SC.912.N.4.2 SC.912.P.10.20 SC.912.P.10.21
38.01 Distinguish the properties of sound waves; including frequency and amplitude.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	MAFS.912.F-TF.2.7	
38.02 Explain the anatomy of the ear and create a model of the ear demonstrating how its structure relates to its function.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.G-GMD.2.4	
38.03 Identify diagnostic tests that assess and evaluate hearing loss.	LAFS.1112.W.2.4	
38.03.01 Perform diagnostic tests to asses and evaluate hearing loss.		
38.04 Research interventions and services available to aide those with hearing loss.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
38.05 Investigate and debate the bioethical concerns related to the use of cochlear implant technology.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.SL.1.2	
39.0 Explore vaccination as a mode of infectious disease prevention. – The student will be able to:		SC.912.L.14.42 SC.912.L.14.52 SC.912.L.16.7 SC.912.L.16.10 SC.912.L.16.11 SC.912.L.16.12 SC.912.N.3.1 SC.912.N.4.1
39.01 Explain how vaccines act as medical interventions to defend the body against infectious invaders.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
39.02 Explore laboratory methods in which vaccines are produced.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
39.03 Describe the structure and function of plasmids and explain their significance in genetic engineering.	LAFS.1112.W.2.4 LAFS.1112.L.3.6,	
39.04 Investigate the importance of epidemiologists and their impact on public health.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
39.05 Describe how vaccines interact with the human immune system.	LAFS.1112.W.2.4	
39.06 Interpret data from a disease outbreak to determine the course of the infection.	LAFS.1112.W.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
39.07 Explore general perspectives on the use of vaccinations.	LAFS.1112.W.2.4 LAFS.1112.SL.1.1A	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
40.0 Investigate the available types of genetic testing/screening and their ethical implications. – The student will be able to:		SC.912.L.14.6 SC.912.L.16.1 SC.912.L.16.2 SC.912.L.16.3 SC.912.L.16.4 SC.912.L.16.5 SC.912.L.16.10 SC.912.L.16.11 SC.912.L.16.12 SC.912.N.1.1 SC.912.N.1.3 SC.912.N.1.6
40.01 Describe genetic testing and how it is used to determine if someone has a genetic disorder.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	HE.912.C.1.5
40.02 Explain how genetic counseling impacts a patient’s health outcome.	LAFS.1112.RI.1.1 LAFS.1112.W.3.7 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
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.	LAFS.1112.W.2.4 MAFS.912.S-IC.1.2	HE.912.C.1.7
40.06 Analyze prenatal genetic screening results.	LAFS.1112.W.2.4	HE.912.C.1.7
40.07 Describe the basics of proper prenatal care as well as specified medical interventions used to monitor a pregnancy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	
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.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-IC.1.2	
41.0 Examine the current reproductive and genetic technology and discuss the future of medical interventions. – The student will be able to:		SC.912.L.16.3 SC.912.L.16.5 SC.912.L.16.13 SC.912.L.16.16 SC.912.N.1.1 SC.912.N.1.3 SC.912.N.1.5

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.N.1.6 SC.912.N.1.7 SC.912.N.2.3 SC.912.N.3.1 SC.912.N.4.1 SC.912.N.4.2
41.01 Explore how gene therapy can be used to treat genetic disorders.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	HE.912.C.1.5
41.02 Discuss and debate the safety and effectiveness of gene therapy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.SL.1.2	
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).	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1	
41.04 Discuss the possibility of reproductive cloning and the ethical concerns.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	
41.05 Evaluate and debate the potential impact of reproductive technology from moral, ethical and scientific perspectives.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	
42.0 Explore the diagnostic techniques and technology being used to better diagnose and understand cancer. – The student will be able to:		SC.912.L.16.5 SC.912.L.16.8
42.01 Investigate the physiology of cancer and discuss how cancerous cells differ from healthy cells.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	HE.912.C.1.5
42.02 Describe the different uses of x-rays, CT scans, and MRI scans.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
42.03 Investigate what DNA microarrays measure and how this information is used to determine differences in gene expression between differing tissues samples.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-IC.2.5 MAFS.912.S-IC.2.6	
42.04 Using statistical analysis, determine the similarities between gene expression patterns of multiple patients.	LAFS.1112.W.2.4 MAFS.912.S-IC.2.5 MAFS.912.S-IC.2.6	
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:		SC.912.L.16.8 SC.912.N.1.5 SC.912.N.1.6 SC.912.N.4.2

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
43.01 Describe the potential risk factors for different types of cancer as well as the ways to reduce the risk.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	HE.912.C.1.3
43.02 Explore some of the various cancer screening techniques that can be used to predict risk for developing cancer.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	HE.912.C.1.5
43.03 Investigate the risk factors of viruses and explain the role viruses' play as a risk factor for certain cancers.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-MD.2.7	
44.0 Investigate the treatments and therapies available to treat the physical, mental, and emotional effects of cancer. – The student will be able to:		SC.912.L.16.8 SC.912.N.1.1 SC.912.N.4.2 SC.912.P.8.6 SC.912.P.8.7
44.01 Identify the major differences between chemotherapy and radiation therapy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.L.3.4C	HE.912.C.1.5
44.02 Describe how chemotherapy drugs interact with and destroy cancer cells.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	HE.912.C.1.5
44.03 Explore biofeedback therapy and how it is utilized to treat cancer and its symptoms.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-IC.2.6	
44.04 Synthesize designs that advances and benefit prosthetic technology for those who have lost their limbs.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 MAFS.912.S-IC.2.6	
44.05 Explain how physical and occupational therapists help patients with disabilities and those recovering from surgery/injury.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8 LAFS.1112.W.1.2	
45.0 Explore future medical interventions for cancer. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.4 SC.912.N.1.6
45.01 Discuss reasons why therapy drugs do not produce the same effect in all individuals.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.SL.1.1	
45.02 Explain how SNP profiles factor into the decision to prescribe a specific medication.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
45.03 Explore the field of pharmacogenetics and its contributions to the improvement of individualized patient treatment.	LAFS.1112.W.2.4, LAFS.1112.W.3.7	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
45.04 Research and present how cases of misuse and abuse have led to strict regulations of human participation in clinical trials.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-MD.2.7	
45.05 Describe the importance of nanomedicine, particularly for cancer research and the development of medical interventions.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
46.0 Explore the medical implications of proteins produced and purified in a laboratory setting. – The student will be able to:		SC.912.L.16.3 SC.912.L.16.4 SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.8 SC.912.L.16.10 SC.912.N.1.1 SC.912.N.1.6 SC.912.N.2.4 SC.912.N.3.1 SC.912.N.3.2 SC.912.N.4.1 SC.912.N.4.2
46.01 Discuss the evolution of diagnosis and treatment of diabetes from the 1800s through today.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	
46.02 Explain the various aspects of the bacterial transformation process.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
46.03 Define chromatography and how it is used to separate items in a mixture.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.L.3.4C LAFS.1112.L.3.6	
46.04 Interpret electrophoresis results to determine the molecular weight of specific proteins in a mixture.	MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1	
46.05 Explore and discuss specific biomedical careers in the manufacturing of therapeutic proteins.	LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
47.0 Investigate the epidemiology and therapeutic interventions of kidney failure. – The student will be able to:		SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.35 SC.912.L.14.45 SC.912.L.14.47

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.L.14.52
47.01 Describe End Stage Renal Disease (ESRD) and how it is diagnosed.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
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.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1	
47.03 Explore the medical options for treatment for persons with ESRD including hemodialysis, peritoneal dialysis and kidney transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	HE.912.C.1.5
48.0 Explore the process, policies and procedures involved in organ transplantation. – The student will be able to:		SC.912.L.14.34 SC.912.L.14.35
48.01 Discuss factors to consider when deciding who should receive an organ transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
48.02 Describe the importance of blood and tissue matching for a successful organ transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
48.03 Describe the general steps involved in a live donor laparoscopic nephrectomy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
48.04 Compare the major similarities and differences between a heart and a kidney transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1	
48.05 Explain the most common ways members of the surgical transplant team work together to ensure a successful transplant.	LAFS.1112.W.2.4 LAFS.1112.SL.1.1	
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:		SC.912.L.14.11 SC.912.L.14.16 SC.912.L.14.34 SC.912.L.14.35 SC.912.L.14.45 SC.912.L.14.52 SC.912.L.16.10 SC.912.N.1.1 SC.912.N.1.3 SC.912.N.1.5 SC.912.N.1.6 SC.912.N.1.7 SC.912.N.2.1 SC.912.N.2.2 SC.912.N.2.3 SC.912.N.2.4 SC.912.N.4.1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.N.4.2
49.01 Explore how a variety of tissues and organs can be transplanted from one organism to another.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
49.02 Describe the general process of how xenotransplantation and tissue engineering works, as well as potential risks, benefits, challenges and ethical/moral concerns.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1 LAFS.1112.SL.1.3	
49.03 Reflect on how current methods of medical intervention can be improved.	LAFS.1112.W.2.4	
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.	LAFS.1112.W.2.4	
49.05 Design a potential “super” human using knowledge of the human body and available medical interventions.	LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8 LAFS.1112.SL.2.4 LAFS.1112.SL.2.5 LAFS.1112.RI.1.1	

**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

**Abbreviations:**

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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
50.0 Investigate biomedical problems related to clinical care by designing an effective emergency care center. – The student will be able to:		SC.912.L.16.10 SC.912.N.1.1
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.	LAFS.1112.SL.1.1 LAFS.1112.W.3.8	HE.912.C.1.5
50.02 Assess overall credibility of a website by analyzing its content.	LAFS.1112.W.2.6	
50.03 Produce an effective presentation of scientific information by using oral communication skills and PowerPoint presentation.	LAFS.1112.SL.1.1B LAFS.1112.SL.2.4 LAFS.1112.W.3.8 LAFS.1112.L.3.4	
50.04 Research and propose solutions to healthcare delivery problems in the 21 <sup>st</sup> century.	LAFS.1112.W.3.8 LAFS.1112.RI.1.1 LAFS.1112.SL.1.1B	
50.05 Design an innovative emergency medicine delivery system.	LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.RI.3.7 LAFS.1112.L.1.1 LAFS.1112.SL.2.4	
50.06 Demonstrate proficiency in using online search engines and journal databases to locate scientific articles.	LAFS.1112.W.2.6	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
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:		SC.912.N.1.1 SC.912.N.1.3 SC.912.N.1.7
51.01	Critique science data presented in popular media and compare this with data presented in scientific journals.	LAFS.1112.W.1.2F LAFS.1112.RI.1.2 MAFS.912.S-IC.1.1 MAFS.912.S-IC.2.6	
51.02	Analyze the results of experimental studies using knowledge of specified statistical analysis methods.	LAFS.1112.RI.1.1 LAFS.1112.W.3.7 MAFS.912.S-IC.1.2 MAFS.912.S-MD.2.7	
51.03	Design, conduct and analyze an experimental study to answer a question regarding one or more body systems.	LAFS.1112.W.3.8 LAFS.1112.L.3.4 MAFS.912.S-IC.1.2 MAFS.912.S-MD.2.7	
51.04	Using at least three statistical fallacies, assume the role of an advertisement sales person selling a fictitious product.	LAFS.1112.SL.1.3 LAFS.1112.W.4.10 MAFS.912.S-MD.2.5	
51.05	Describe the various biomedical career fields related to clinical or research studies.	LAFS.1112.W.3.1A,E LAFS.1112.W.3.7 LAFS.1112.L.3.4	
52.0	Explore the process, knowledge and skills required to design a medical innovation. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.7
52.01	Investigate the evolution of biomedical products.	LAFS.1112.W.3.7	
52.02	Brainstorm ideas for a new biomedical product or methods to improve an existing product.	LAFS.1112.W.3.7	
52.03	Discuss the role of the scientific design process and how it is significant to medical innovation.	LAFS.1112.SL.1.1	
52.04	Identify a problem related to the medical field and research the past and present solutions to this problem.	LAFS.1112.W.3.8 LAFS.1112.L.3.4 LAFS.1112.L.3.7 LAFS.1112.SL.1.1B	
52.05	Examine possible design solutions to the selected problem, determine the best approach and develop a design proposal.	LAFS.1112.W.4.10 LAFS.1112.L.3.4	
52.06	Design a marketing plan to pitch the chosen solution to potential investors.	LAFS.1112.SL.2.4 LAFS.1112.W.1.2F	
53.0	Explore biomedical innovation through investigating water contamination. – The student will be able to:		SC.912.L.14.6 SC.912.L.14.52

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.L.17.13 SC.912.L.17.15 SC.912.L.17.16 SC.912.L.17.17 SC.912.L.17.18 SC.912.N.1.1 SC.912.N.1.4 SC.912.N.1.6
53.01 List and describe multiple causes of water contamination.	LAFS.1112.SL.1.1 LAFS.1112.L.3.4	
53.02 Explain why water quality is a global issue.	LAFS.1112.SL.1.1 LAFS.1112.W.4.10	HE.912.C.1.3
53.03 Extrapolate on the cause of non-point source pollution and its implications.	LAFS.1112.W.3.7 LAFS.1112.W.4.10	
53.04 Using knowledge of specific assays, interpret the results of various chemical and culture assays and identify specific contaminants found.	LAFS.1112.W.1.2F LAFS.1112.W.2.4 LAFS.1112.L.3.4 MAFS.912.S-IC.2.6	
53.05 Research and propose solutions to prevent or treat water contamination.	LAFS.1112.W.3.8 LAFS.1112.RI.2.4	
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.	LAFS.1112.W.1.2 LAFS.1112.L.3.4	HE.912.C.1.3
53.07 Research and report on the quality of the local water.	LAFS.1112.SL.2.4 LAFS.1112.L.3.4 MAFS.912.S-IC.2.6	HE.912.C.1.3
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:		SC.912.L.14.6 SC.912.L.14.52 SC.912.L.16.3 SC.912.L.16.5 SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.9 SC.912.L.16.12 SC.912.N.1.1 SC.912.N.1.4 SC.912.N.1.6
54.01 Discuss the significant role that epidemiologists and public health investigators play in a public health crisis.	LAFS.1112.W.1.3A, E LAFS.1112.W.3.7	HE.912.C.1.5

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.1112.L.3.4 MAFS.912.S-IC.1.2 MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
54.02 Describe how to set-up case control and cohort studies.	LAFS.1112.W.2.4	
54.03 Discuss how measures of association are used to illustrate the correlation between specific risk factors and the development of disease.	LAFS.1112.SL.1.1B	HE.912.C.1.3
54.04 Calculate the measures of association used to assess risk in case control and cohort studies.	MAFS.912.S-CP.1.5 MAFS.912.S-IC.2.6	
54.05 List and discuss the various components that may be involved in a public health intervention plan.	LAFS.1112.L.3.4 LAFS.1112.SL.1.1B	
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.	LAFS.1112.W.3.8 LAFS.1112.SL.2.4 LAFS.1112.SL.1.1B LAFS.1112.L.3.4 MAFS.912.S-IC.1.2 MAFS.912.S-IC.2.6 MAFS.912.S-IC.2.4	
54.07 Research local, national and global health issues and analyze how culture, geographic location and access to health care affect health and wellness.	LAFS.1112.W.3.8 LAFS.1112.SL.1.1B LAFS.1112.SL.2.4 LAFS.1112.L.3.4 LAFS.1112.RI.1.1	HE.912.C.1.3
54.08 Write a grant proposal outlining an intervention plan for a particular public health issue.	LAFS.1112.W.3.8 LAFS.1112.SL.1.1B LAFS.1112.L.3.4	
54.09 Present and defend the proposed intervention plan to a professional audience.	LAFS.1112.SL.2.4	
55.0 Understand medical research and the process of writing a scientific grant. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.3 SC.912.N.1.4 SC.912.N.1.7 SC.912.N.2.4 SC.912.N.4.2
55.01 Define and elaborate on what medical research is used for and how funding for it is obtained.	LAFS.1112.W.3.7	
55.02 Explain the role of a grant in relation to medical research.	LAFS.1112.SL.1.1 LAFS.1112.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
55.03 Understand the difference between what constitutes a credible source opposed to a non-credible source when conducting a literature search.	LAFS.1112.W.3.7	
55.04 Distinguish between primary and secondary sources.	LAFS.1112.W.3.7	
55.05 Discuss potential bias based on construct and funding sources of research.	MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1 MAFS.912.S-IC.2.5 MAFS.912.S-IC.2.6	
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).	LAFS.1112.W.3.7 LAFS.1112.SL.1.1	
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.	LAFS.1112.W.3.7 LAFS.1112.SL.2.4 LAFS.1112.SL.2.5 LAFS.1112.W.1.2 LAFS.1112.W.2.6	
56.0 (Optional) Use modern molecular biology techniques to clone and transfer DNA. – The student will be able to:		SC.912.L.16.3 SC.912.L.16.5 SC.912.L.16.6 SC.912.L.16.7 SC.912.L.16.9 SC.912.L.16.12
56.01 Explain the structure and function of plasmids, and how they are used in genetic engineering.	LAFS.1112.L.3.4 LAFS.1112.W.2.4 LAFS.1112.SL.1.1	
56.02 Describe the role restriction enzymes and how they interact with plasmids.	LAFS.1112.W.3.8 LAFS.1112.SL.1.1A,C,D LAFS.1112.W.1.2F	
56.03 Interpret plasmid maps to determine the results of specific digestions with restriction enzymes.	LAFS.1112.W.1.2F	
56.04 Explain how to assemble recombinant DNA and clone a gene of interest using bacterial cells.	LAFS.1112.L.3.4 LAFS.1112.SL.1.1 LAFS.1112.W.2.4	
56.05 Interpret gel electrophoresis results to determine the success of a cloning experiment.	LAFS.1112.W.1.2F MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	



CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	MAFS.912.N-Q.1.1	
56.06 Using the process of bacterial transformation, insert a new plasmid into bacterial cells.	LAFS.1112.W.3.9 LAFS.1112.RI.3.7	
56.07 Draw and label possible ligation products and describe digestion results for each product.	LAFS.1112.SL.1.1 LAFS.1112.W.2.4	
57.0 (Optional) Assuming the role of a medical expert, investigate a mysterious death using forensics autopsy techniques.–The student will be able to:		SC.912.N.1.1
57.01 Describe observations of the internal and external anatomy of a fetal pig.	LAFS.1112.W.4.10 LAFS.1112.L.3.4 LAFS.1112.W.1.2F	
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.	LAFS.1112.RI.1.2 LAFS.1112.W.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.G-GMD.2.4 MAFS.912.S-IC.2.6	
57.04 Solve the cause of death for a fetal pig by assuming the role of a forensic pathologist.	LAFS.1112.W.1.2F MAFS.912.S-IC.2.6	
57.05 Design a fictitious death scenario using knowledge of the human body.	LAFS.1112.W.1.2	
57.06 Create fictitious documents including an autopsy report and medical history to illustrate clues left behind in a dead body.	LAFS.1112.W.1.2 MAFS.912.N-Q.1.1	
57.07 Research and reflect on the various biomedical careers involved in forensic pathology and describe two of these careers in detail.	LAFS.1112.W.1.3A,E	
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:	MAFS.912.S-IC.2.3-6	SC.912.N.1.1
58.01 Choose a topic and describe work previously completed pertaining to that topic.	LAFS.1112.W.3.8 LAFS.1112.L.3.4	
58.02 Interpret charts, graphs, data sets and any other information related to the project.	LAFS.1112.W.1.2F	
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.	LAFS.1112.W.3.8 LAFS.1112.L.3.4	

CTE Standards and Benchmarks	FS-M/LA	NGSS-Sci/HE
	LAFS.1112.SL.2.4	
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.	LAFS.1112.W.1.3A,E	
58.07 Prepare a portfolio of all artifacts related to the project in order to demonstrate the work progression.	LAFS.1112.W.3.8 LAFS.1112.L.3.4	

## **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.

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 Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). 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 an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. 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.

## **Regulated Programs**

### **This program is regulated by the Florida Board of Funeral, Cemetery, and Consumer Services.**

The Florida Funeral Director Certificate holder may take the Florida Laws and Rules Exam to practice as a licensed Funeral Director according to Florida Statute 497.373 as approved by the Florida Department of Financial Services, Division of Funeral, Cemetery and Consumer Services.

## **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 Develop basic observational skills and related documentation strategies in written and oral form.

01.11 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	Maintain a safe, uncluttered and clean work area.
02.05	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.).
02.06	Follow standard precautions for biological pathogen, both proper handling and disposal, and define principles of contamination control including standard and transmission based precautions.
02.07	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	Set up 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	Apply decision making skills in the workplace.
05.03	Make decisions based on accurate facts, data, and agreed-upon goals.
05.04	Evaluate the decision made.
05.05	Demonstrate ability to evaluate data and draw conclusions.
05.06	Diagnose problem, its urgency and causes, and documenting as appropriate.
05.07	Explore possible solutions to a problem and compare/contrast advantages.
05.08	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	Decontaminate and/or dispose of equipment, glassware, biologicals.
06.03	Perform microbiology skills, which may include but are not limited to, plating techniques, isolating and characterizing cell lines, propagating cell lines, and cryogenic techniques.
06.04	Perform various genetic engineering techniques including but not limited to, transformation, transfection of mammalian, insect, and/or bacterial cells.
06.05	Perform bioassays.
06.06	Perform immunological techniques, including but not limited to, enzyme-linked immunosorbent assays, use of monoclonal and polyclonal antibodies, and Western blot techniques.
06.07	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.
06.08	Demonstrate an understanding of translation assays, DNA libraries and isotopic and non-isotopic labeling techniques.
06.09	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.
06.10	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.
06.11	Collect data, perform assays, and document results of laboratory instruments.
06.12	Demonstrate knowledge of instrument-based separation, including but not limited to various chromatography techniques and other separation methodologies (e.g., FACS).

06.13	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	Understand 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>Career Certificate 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 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 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.
- 08.0 Explain the importance of employability skills.
- 09.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 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 and carpal 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	Explain 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 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 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).
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 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 training or 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 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	Maintain a career portfolio to document knowledge, skills, and experience.

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 blood borne diseases, including HIV/AIDS – 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 blood borne pathogens including Hepatitis B.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by 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 blood borne pathogens.
09.05	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.
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.
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 handwashing 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.

**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	Record conditions diagnosed by the dentist.
15.04	Record treatment-related data on the patient's clinical record.
15.05	Record treatment plan and treatment in patient's chart.
15.06	Perform a visual assessment of existing oral conditions.
15.07	Distinguish between and report subjective and objective information.
15.08	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.
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 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.
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 extra oral and carpal 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.

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, and 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	Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.
19.05	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	Provide patient preventive education and oral hygiene instruction.

20.02	Prepare and set up for various preventive procedures.
20.03	Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.
20.04	Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.05	Clean and polish removable dental appliances.
20.06	Assist with and place dental dams as permitted by Florida Statute and Florida Board of Dentistry Rule.
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	Prepare and maintain office financial records.
21.06	Prepare and maintain dental office inventory control and purchasing.
21.07	Demonstrate public relations responsibilities of the secretary/receptionist.
21.08	Demonstrate skills on office equipment.
21.09	Maintain the dental business office environment.
21.10	Receive and dismiss patients and visitors.
21.11	Demonstrate appropriate patient management/customer service skills.
21.12	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	Explain 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 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 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).
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 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 training or 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.
07.01.01	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	Maintain a career portfolio to document knowledge, skills, and experience.
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 blood borne diseases, including HIV/AIDS – 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 blood borne pathogens including Hepatitis B.
09.03	Identify "at risk" behaviors that promote the spread of diseases caused by 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 blood borne pathogens.
09.05	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.
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.
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 handwashing 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.
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	Record conditions diagnosed by the dentist.
15.04	Record treatment-related data on the patient's clinical record.
15.05	Record treatment plan and treatment in patient's chart.
15.06	Perform a visual assessment of existing oral conditions.
15.07	Distinguish between and report subjective and objective information.
15.08	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.
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 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.
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 extra oral and carpal 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.
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, and 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	Perform patient education to include pre- and post-operative instructions as prescribed by a dentist.
19.05	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	Provide patient preventive education and oral hygiene instruction.
20.02	Prepare and set up for various preventive procedures.
20.03	Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.
20.04	Perform coronal polish and apply anticariogenic and desensitizing treatments as permitted by Florida Statute and Florida Board of Dentistry Rule.
20.05	Clean and polish removable dental appliances.
20.06	Assist with and place dental dams as permitted by Florida Statute and Florida Board of Dentistry Rule.
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	Prepare and maintain office financial records.
21.06	Prepare and maintain dental office inventory control and purchasing.
21.07	Demonstrate public relations responsibilities of the secretary/receptionist.
21.08	Demonstrate skills on office equipment.
21.09	Maintain the dental business office environment.
21.10	Receive and dismiss patients and visitors.
21.11	Demonstrate appropriate patient management/customer service skills.
21.12	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:
22.01.01	Perform dental assisting duties, dental assisting expanded functions, and dental radiographic procedures in a clinical setting under the direct supervision of a licensed dentist.
22.01.02	Interact with a professional dental team in the delivery of patient services.
22.01.03	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:** Dental Laboratory Technology and Management  
**Career Cluster:** Health Science

AAS	
CIP Number	0351060301
Program Type	College Credit
Standard Length	68 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 the Health Science career cluster.

The content includes but is not limited to, general studies, physical sciences, dental sciences, dental laboratory techniques, dental laboratory management and business principles, computer applications in the dental laboratory, leadership and communications 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 68 credit hours.

## **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 and Management  
**CIP Number:** 0351060301  
**Program Length:** 68 credit hours  
**SOC Code(s):** 11-9111

**Refer to Rule 6A-14.030 (5) F.A.C., for the minimum amount of general education coursework required in the Associate in Applied Science (AAS) degree. At the completion of this program, the student will be able to:**

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.
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.
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.
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.
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 students 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.
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.
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:
17.01.01	Implant / fixture
17.01.02	Healing Abutment Cover Screw/ Screw
17.01.03	Abutment
17.01.04	Temporary Components
17.01.05	Angulated Abutment
17.01.06	Impression Coping
17.01.07	Open tray/closed tray
17.01.08	Abutment replicas

17.01.09	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.
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**

The program is designed to prepare students for entry level employment as dental laboratory technicians, dental laboratory managers, dental laboratory owners, and marketing/sales personnel of dental products or SOC Code 11-9111 (Medical and Health Services Managers) or to provide supplemental training for persons previously or currently employed in this occupation. 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.

Reinforcement of basic skills in English, mathematics and science appropriate for the job preparatory programs occurs through college level instruction, applied laboratory procedures or practice, clinical observation and involvement in the dental health care delivery team concept.

The program will include theoretical aspects of subjects as well as the practical applications. The theoretical aspects of the curriculum will provide content necessary for students to make judgments regarding the procedures they are expected to perform.

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 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.

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 Care Services  
**Career Cluster:** Health Science

CCC	
CIP Number	0351070201
Program Type	College Credit Certificate (CCC)
Program Length	32 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 supervisors 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 mid-management positions in the health field.

The content includes but is not limited to leadership and supervisory skills, laws and regulations pertaining to health care facilities and agencies, organizational structure of health care facilities, budgeting and fiscal management, 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 an understanding of information technology applications in healthcare.
- 06.0 Demonstrate employability skills.
- 07.0 Basic knowledge of medical language, anatomy and physiology, disease processes and pharmacology.
- 08.0 Demonstrate knowledge of materials and supplies needed to care in healthcare and how to obtain them in various 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 operational and organizational structures of health care facilities.
- 12.0 Demonstrate knowledge of appropriate human resource management in healthcare.
- 13.0 Identify and apply basic knowledge of departmental capital and operational budgets.
- 14.0 Demonstrate knowledge of reimbursement systems and methodologies.

Florida Department of Education  
Student Performance Standards

Program Title: Health Care Services  
 CIP Number: 0351070201  
 Program Length: 32 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.
01.06	Recognize methods for building positive team relationships.
01.07	Analyze attributes and attitudes of an effective leader.
01.08	Recognize factors and situations that may lead to conflict.
01.09	Demonstrate effective techniques for managing team conflict.
01.10	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	Develop essential observational skills.
02.03	Distinguish the differences between effective and ineffective communication practices.

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 an understanding of 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 informed consent including scenarios when it is not possible or granted.
03.07	Differentiate between legal and ethical issues in healthcare.
03.08	Describe key components of personal, professional, and organizational ethics.
03.09	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice.
03.10	Discuss what constitutes illegal and/or unethical practices of healthcare workers and the protocols for reporting.
04.0	Recognize and practice safety and security procedures. – The student will be able to:
04.01	Recognize safe and unsafe working conditions and the necessary protocol to report safety hazards.
04.02	Explain how medical errors might occur and describe ways to prevent or mitigate such errors.
04.03	Describe national personal safety standards advocated by leading healthcare agencies.
04.04	Discuss appropriate regulatory and accrediting agency patient safety guidelines.
04.05	Demonstrate an understanding of roles and responsibilities during manmade and natural disasters.
04.06	Understand benefits and correct method to put on and disrobe from personal protective equipment (PPE).
04.07	Identify risk management activities.

05.0	Demonstrate an understanding of 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 and outcome assessment and governed quality measures.
05.06	Identify protected Patient Health Information (PHI).
05.07	Identify methods for preventing PHI breaches and technology security.
05.08	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	Exemplify 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 including levels of education, credentialing requirements employment opportunities, workplace environments 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	Use appropriate medical terminology and abbreviations.
07.02	Demonstrate knowledge of clinical terminology as relates to healthcare management.
07.03	Describe the structure and function of different body systems.
07.04	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body.
07.05	Demonstrate an understanding of basic discharge and transfer procedures.
08.0	Demonstrate knowledge of materials and supplies needed in healthcare and how to obtain them in various healthcare settings. –

The student will be able to:
08.01 Prepare purchase orders, being mindful of current financial status of institution.
08.02 Shop for quality, price, and quantity.
08.03 Demonstrate a working knowledge of an effective inventory management system.
08.04 Identify accounts payable practices.
08.05 Identify steps to investigate needed supplies for adding a healthcare service and determining impacts to profit and loss.
<b>Health Services Management (9-14)</b>
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 perspectives related to the management of health care organizations and the means by which the application of sound management principles and behavior can facilitate change.
09.02 Interpret managerial principles, practices and processes to the delivery of health care.
09.03 Identify the role, responsibilities and parameters for the various levels of management within the health care organizations.
09.04 State the control processes and techniques used to ensure that the objectives, strategies and policies of health care delivery are achieved effectively and efficiently.
09.05 Relate the various aspects of organizational dynamics (decision making, motivation, leadership, and communication) to the needs and problems of health care organizations.
09.06 Relate personnel administration practices to the total scope of labor relations, including manpower acquisition, maintenance, and utilization.
09.07 Conduct needs analysis to identify and prioritize workflow requirements.
09.08 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.
10.05 Identify the Florida Statutes as applied to health care facilities.
11.0 Demonstrate knowledge of operational and organizational structures of health care facilities. – The student will be able to:

11.01	Describe the functions and standards of departments in health care facilities.
11.02	Distinguish similarities and differences between administrative roles and responsibilities in different types of health care agencies.
11.03	Describe principles and philosophies of health care agencies delivering long-term, acute and other types of health care services and their individual role in the overall healthcare delivery system.
11.04	Identify ancillary services that support health care agencies.
11.05	Compare and contrast different healthcare setting operation structures.
12.0	Demonstrate knowledge of appropriate human resource management in healthcare – The student will be able to:
12.01	Prepare job descriptions.
12.02	Explain the laws governing harassment, labor and employment.
12.03	Illustrate employee satisfaction measurement and improvement techniques.
12.04	Demonstrate the understanding of the legal aspects of human resource management.
12.05	Prepare policy and procedure manuals.
12.06	Explain the components of an effective staff meeting.
12.07	Identify recruitment and retention strategies.
12.08	Demonstrate key components of a performance evaluation.
12.09	Identify methods to assess and develop orientation and training programs for personnel.
12.10	Identify methods to enhance teamwork, collaboration and personnel empowerment.
13.0	Identify and apply basic knowledge of departmental capital and operational budgets. – The student will be able to:
13.01	Describe the budget process and operational budget format.
13.02	Explain a capital budget justification format.
13.03	Delegate capital budget preparation to key managers.
13.04	Analyze and approve appropriate capital budget items.
13.05	Analyze and approve appropriate financial levels in each operational budget.
14.0	Demonstrate knowledge of volume and growth, reimbursement systems and methodologies– The student will be able to:

14.01	Identify common methods, benefits and challenges of payment for healthcare services.
14.02	Demonstrate knowledge of a patient classification system within a health care facility.
14.03	Identify billing and insurance terminology.
14.04	Demonstrate understanding of the process of utilization review.
14.05	Demonstrate knowledge of accounts receivable system that monitors and optimizes reimbursement.
14.06	Demonstrate knowledge of third party reimbursements including Center for Medicare/Medicaid Services (CMS) rulings and precedence to other payors.
14.07	Demonstrate basic knowledge of the procedures and purposes of medical documentation, medical billing and coding.
14.08	Demonstrate knowledge of the revenue cycle.
14.09	Explain government impacts to reimbursement (i.e. value-based payment models, government incentive programs, self-pay models, and HCAPS scores).
14.10	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>Career Certificate 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)	29-2099 Health Technologists and Technicians, All Other 31-9094 Medical Transcriptionists	29-2099 Health Technologists and Technicians, All Other 31-9094 Medical Transcriptionists
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>Career Certificate Program</b>
Program Number	N/A	H170530
CIP Number	0351070713	0351070715
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:** 0351070713  
**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	0351070714
Program Type	College Credit Certificate (CCC)
Program Length	37 credit hours
CTSO	HOSA: Future Health Professionals; Phi Beta Lambda
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: 0351070714  
 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

CCC	
CIP Number	0351071901
Program Type	College Credit Certificate (CCC)
Standard Length	30 credit hours
CTSO	HOSA
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		Career Certificate 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.