**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, 30, 31	
Standard Length	3 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *(See DOE approved list)
	Dental Aide 3	DENTL ASST @7 7G DEN LABTEC 7G
CTSO	HOSA	
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417141	Dental Aide 3	1 credit	31-9099	2	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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%

** *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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Dental Aide.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Dental Aide.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Dental Aide.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-43 encompass competencies specific to Dental Aide 3:
31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Dental Aide.
32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Dental Aide.

33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Dental Aide.
34.0 Use dental terminology.
35.0 Identify structures and explain functions and pathologies of dental anatomy.
36.0 Identify disease prevention and perform infection control procedures.
37.0 Describe the legal and ethical responsibilities of the dental health care worker.
38.0 Identify, describe, and maintain dental instruments and equipment.
39.0 Identify properties and uses of dental materials which include gypsum, restorative material, acrylics, dental cements, impression materials and waxes.
40.0 Describe basic dental laboratory procedures.
41.0 Describe dental assisting duties.
42.0 Identify specialty dental procedures.
43.0 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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Dental Aide.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.RST.2.6	
	31.03	Integration of Knowledge and Ideas	
	31.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
		LAFS.1112.RST.3.7	
	31.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
		LAFS.1112.RST.3.8	
	31.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
		LAFS.1112.RST.3.9	
	31.04	Range of Reading and Level of Text Complexity	
	31.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	31.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
		LAFS.1112.RST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Dental Aide.		
	32.01	Text Types and Purposes	
	32.01.1	Write arguments focused on discipline-specific content.	
		LAFS.1112.WHST.1.1	
	32.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
		LAFS.1112.WHST.1.2	
	32.02	Production and Distribution of Writing	
	32.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
		LAFS.1112.WHST.2.4	
	32.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
		LAFS.1112.WHST.2.5	

Florida Standards	Correlation to CTE Program Standard #
32.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Dental Aide.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
33.07 Look for and make use of structure. MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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 Use dental terminology--The student will be able to:		
34.01 Identify and define common dental terms.	LAFS.910.L.3.6	SC.912.N.1.1
34.02 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
35.0 Identify structures and explain functions and pathologies of dental and general head and neck anatomy--The student will be able to:		
35.01 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
35.02 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
35.03 Describe the histological components of the head, oral cavity, and elements of the teeth and supporting structures.		SC.912.L.14.12
35.04 Recognize and describe oral pathological conditions.	MAFS.912.S-CP.1.5	SC.912.L.14.6
36.0 Identify principles of microbiology and disease prevention and perform infection control procedures--The student will be able to:		
36.01 Differentiate between pathogenic and non-pathogenic microorganisms.	LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.L.14.6

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
36.02	Describe pathogens and modes of disease transmission. 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
36.03	Perform aseptic handwashing technique.	LAFS.910.SL.2.4	SC.912.L.14.6
36.04	Describe and apply methods of cleaning, disinfection and sterilization.	LAFS.910.SL.2.4	SC.912.L.14.6
36.05	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
36.06	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
36.07	Describe the duties of the dental office safety coordinator.	LAFS.910.RI.4.10	SC.912.N.1.1
36.08	Identify areas of the OSHA Bloodborne Pathogens Standard (29CFR-1910.1030) applicable to the dental office environment.	LAFS.910.RI.4.10	SC.912.N.1.1
37.0	Describe the legal and ethical responsibilities of the dental health care worker--The student will be able to:		
37.01	Define commonly used legal vocabulary relating to dentistry.	LAFS.910.L.3.6	
37.02	Describe legal and ethical consideration/obligations in the dental team-patient relationship.	LAFS.910.RI.3.9	
37.03	Explain risk management.	LAFS.910.RI.1.1	
37.04	Identify areas of Florida Statute 466 and Rule 64B5-16 FAC applicable to practice by the dental health workers.	LAFS.910.RI.1.2	
37.05	Implement appropriate Joint Commission patient safety goals.		
38.0	Identify, describe, and maintain dental instruments and equipment--The student will be able to:		
38.01	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
38.02	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
38.03	Maintain dental operatory equipment and instruments.	LAFS.910.L.3.6 LAFS.910.RI.3.9	SC.912.N.1.1

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.910.RI.4.10 LAFS.910.SL.2.4	
	38.04 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
39.0	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:		
	39.01 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
	39.02 Describe the manipulative skills necessary to properly prepare dental materials for use both intraorally and extraorally.	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
	39.03 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	
	39.04 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	
	39.05 Describe the physical conditions in the oral cavity which influence the selection of dental materials.	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
	39.06 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	SC.912.P.8.2 SC.912.P.8.11

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.RI.4.10 LAFS.910.SL.2.4	
39.07 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	
39.08 Define terms related to dental materials and science.	LAFS.910.L.3.6	
40.0 Describe basic dental laboratory procedures--The student will be able to:		
40.01 Identify properties and uses of 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
40.02 Identify properties and uses of 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
40.03 Identify properties and uses of waxes.	LAFS.910.L.3.8 LAFS.910.RI.3.9 LAFS.910.RI.4.10	SC.912.P.8.2
40.04 Perform laboratory infection control.	LAFS.910.SL.2.4	SC.912.N.1.1 SC.912.L.14.6
41.0 Describe dental assisting duties--The student will be able to:		
41.01 Describe procedures used to evacuate and maintain the operating field.	LAFS.910.SL.2.4	SC.912.N.1.1
41.02 Assemble instruments for general/and specialty dental procedures.	LAFS.910.SL.2.4	
42.0 Identify specialty dental procedures--The student will be able to:		
42.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8	
42.02 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	
42.03 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	
42.04 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	
42.05 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 LAFS.910.W.3.8 LAFS.1112.L.3.6	
42.06 Identify and describe endodontics.	LAFS.910.L.3.6 LAFS.910.W.1.2 LAFS.910.W.2.4 LAFS.910.W.2.5	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.W.2.6 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.L.3.6	
42.07 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	
43.0 Identify dental business office procedures--The student will be able to:		
43.01 Describe appointment control.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.02 Describe an active recall system.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.03 Describe steps for maintaining accurate patient records.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.04 Describe steps for maintaining patient financial records and collecting fees.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.05 Describe methods of dental office inventory control.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.06 Describe public relations responsibilities of the secretary/receptionist.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.07 Identify skills required for operating on office equipment.	LAFS.910.RI.1.2 LAFS.910.RI.4.10	
43.08 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

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

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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31	
Standard Length	4 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *(See DOE approved list)
	Dental Laboratory Assisting 3 and 4	DEN LABTEC 7G
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	51-9081 Dental Laboratory Technicians 31-9099 Healthcare Support Workers, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
> 8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
A	8417110	Health Science Foundations	1 credit	31-9099	2	VO
	8417151	Dental Laboratory Assisting 3	1 credit	51-9081	2	VO
B	8417152	Dental Laboratory Assisting 4	1 credit	51-9081	2	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Dental Laboratory Assistant.
02.0 Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Dental Laboratory Assistant.
03.0 Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Dental Laboratory Assistant.
04.0 Analyze and interpret an overview of the human body, including organization and chemical process.
05.0 Apply correct medical terminology relating to body structure and function within a real-world application.
06.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0 Analyze the integumentary system in relation to health and disease.
08.0 Analyze the skeletal system in relation to health and disease.
09.0 Analyze the muscular system in relation to health and disease.
10.0 Analyze the nervous system in relation to health and disease.
11.0 Analyze the endocrine system in relation to health and disease.
12.0 Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0 Analyze the lymphatic and immune systems in relation to health and disease.
14.0 Analyze the respiratory system in relation to health and disease.
15.0 Analyze the digestive system in relation to health and disease.
16.0 Analyze the urinary system in relation to health and disease.
17.0 Analyze the both the male and female reproductive systems in relation to health and disease.
18.0 Identify and explain factors relating to genetics and disease.
19.0 Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0 Demonstrate legal and ethical responsibilities.
23.0 Demonstrate an understanding of and apply wellness and disease concepts.
24.0 Recognize and practice safety and security procedures.
25.0 Recognize and respond to emergency situations.
26.0 Recognize and practice infection control procedures.
27.0 Demonstrate an understanding of information technology applications in healthcare.
28.0 Demonstrate employability skills.
29.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0 Apply basic math and science skills.

Standards 31-38 encompass competencies specific to Dental Laboratory Assisting 3 & 4:

31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Dental Laboratory Assistant.
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Dental Laboratory Assistant.
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Dental Laboratory Assistant.
34.0 Demonstrate communication and computational skills used in a dental laboratory.
35.0 Identify anatomic structure and function of body systems in relation to dental laboratory science.
36.0 Demonstrate computer literacy for dental labs.
37.0 Practice selected dental laboratory techniques.
38.0 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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Dental Laboratory Assistant.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.RST.2.6	
	31.03	Integration of Knowledge and Ideas	
		31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
		31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
		31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
	31.04	Range of Reading and Level of Text Complexity	
		31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
		31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Dental Laboratory Assistant.		
	32.01	Text Types and Purposes	
		32.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
		32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
	32.02	Production and Distribution of Writing	
		32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
		32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.2.5	
	32.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
	32.03	Research to Build and Present Knowledge	
	32.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	32.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	32.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
	32.04	Range of Writing	
	32.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.1112.WHST.4.10	
33.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Dental Laboratory Assistant.		
	33.01	Make sense of problems and persevere in solving them.	
		MAFS.K12.MP.1.1	
	33.02	Reason abstractly and quantitatively.	
		MAFS.K12.MP.2.1	
	33.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	33.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	33.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	33.06	Attend to precision.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.		
	MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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: FS-M/LA

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
34.0 Demonstrate communication and computational skills used in a dental laboratory–The student will be able to:		
34.01 Use appropriate dental terminology and abbreviations.		
34.02 Demonstrate the ability to interpret dental laboratory prescriptions.		
34.03 Demonstrate communication skills specific to the dental laboratory setting.		
35.0 Identify anatomic structure and function of body systems in relation to dental laboratory science--The student will be able to:		
35.01 Describe the structure and function of head and neck anatomy.		
35.02 Apply understanding of head and neck anatomy in relation to patient use of dental appliances.		
36.0 Demonstrate computer literacy for dental labs–The student will be able to:		
36.01 Describe the uses of computers in the health occupation being studied.		
36.02 Demonstrate computational, keyboarding and retrieval skills relevant to job requirements of the dental laboratory industry.		
36.03 Demonstrate computer skills in each clinical rotation.		
36.04 Describe the use of CAD/CAM technology in the dental laboratory.		
37.0 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

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
			SC.912.P.12.12
	37.01 Fabricate a variety of dental models from impressions using appropriate gypsum products and techniques,		
	37.02 Fabricate selected provisional dental restorations.		
	37.03 Fabricate selected provisional dental prostheses.		
	37.04 Fabricate selected dental appliances such as athletic guards, night guards, and bleaching trays.		
	37.05 Fabricate custom impression trays and bite rims.		
38.0	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
	38.01 Demonstrate safe use, care and maintenance of equipment and materials.		
	38.02 Properly identify and label models, prostheses, etc.		
	38.03 Recognize atypical behavior.		
	38.04 Follow emergency procedures for a dental laboratory.		
	38.05 Demonstrate knowledge of sterile technique and disease prevention in the dental lab.		
	38.06 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.

Florida Standards	Correlation to CTE Program Standard #
30.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Dental Laboratory Assistant.	
30.01 Key Ideas and Details	
30.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
30.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
30.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
30.02 Craft and Structure	
30.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
30.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
30.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
	LAFS.1112.RST.2.6	
30.03 Integration of Knowledge and Ideas	
30.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
	LAFS.1112.RST.3.7	
30.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
	LAFS.1112.RST.3.8	
30.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
	LAFS.1112.RST.3.9	
30.04 Range of Reading and Level of Text Complexity	
30.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
30.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
	LAFS.1112.RST.4.10	
31.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Dental Laboratory Assistant.	
31.01 Text Types and Purposes	
31.01.1 Write arguments focused on discipline-specific content.	
	LAFS.1112.WHST.1.1	
31.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
	LAFS.1112.WHST.1.2	
31.02 Production and Distribution of Writing	
31.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
	LAFS.1112.WHST.2.4	
31.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
	LAFS.1112.WHST.2.5	

Florida Standards		Correlation to CTE Program Standard #
	31.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
31.03	Research to Build and Present Knowledge	
	31.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
	31.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
	31.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
31.04	Range of Writing	
	31.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Dental Laboratory Assistant.	
32.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
32.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
32.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
32.04	Model with mathematics. MAFS.K12.MP.4.1	
32.05	Use appropriate tools strategically. MAFS.K12.MP.5.1	
32.06	Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
32.07 Look for and make use of structure. MAFS.K12.MP.7.1	
32.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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.

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

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

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.

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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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31
Standard Length	2.5 credits
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *(See DOE approved list)
	Electrocardiograph Aide 3	LAB TECH @7 7G LAB ASST @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)
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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 (Previously titled Health Science 1)
        8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
A	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417161	Electrocardiograph Aide 3	.5 credit	31-9099	2	VO

Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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%
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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Allied Health Assisting.

02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Allied Health Assisting.

03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Allied Health Assisting.

04.0   Analyze and interpret an overview of the human body, including organization and chemical process.

05.0   Apply correct medical terminology relating to body structure and function within a real-world application.

06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.

07.0   Analyze the integumentary system in relation to health and disease.

08.0   Analyze the skeletal system in relation to health and disease.

09.0   Analyze the muscular system in relation to health and disease.

10.0   Analyze the nervous system in relation to health and disease.

11.0   Analyze the endocrine system in relation to health and disease.

12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.

13.0   Analyze the lymphatic and immune systems in relation to health and disease.

14.0   Analyze the respiratory system in relation to health and disease.

15.0   Analyze the digestive system in relation to health and disease.

16.0   Analyze the urinary system in relation to health and disease.

17.0   Analyze the both the male and female reproductive systems in relation to health and disease.

18.0   Identify and explain factors relating to genetics and disease.

19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.

20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.

21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.

22.0   Demonstrate legal and ethical responsibilities.

23.0   Demonstrate an understanding of and apply wellness and disease concepts.

24.0   Recognize and practice safety and security procedures.

25.0   Recognize and respond to emergency situations.

26.0   Recognize and practice infection control procedures.

27.0   Demonstrate an understanding of information technology applications in healthcare.

28.0   Demonstrate employability skills.

29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.

30.0   Apply basic math and science skills.

Standards 31-37 encompass competencies specific to EKG Aide:

31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Electrocardiograph Aide.
32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Electrocardiograph Aide.
33.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Electrocardiograph Aide.
34.0   Describe the cardiovascular system.
35.0   Identify legal and ethical responsibilities of an EKG aide.
36.0   Demonstrate knowledge of, apply and use medical instrumentation modalities.
37.0   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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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 we training in the appropriate theories and instruments used by an Electrocardiograph Aide.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Electrocardiograph Aide.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. _LAFS.1112.RST.1.1_	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. _LAFS.1112.RST.1.2_	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. _LAFS.1112.RST.1.3_	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. _LAFS.1112.RST.2.4_	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. _LAFS.1112.RST.2.5_	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
	LAFS.1112.RST.2.6	
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Electrocardiograph Aide.	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content.	
LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
LAFS.1112.WHST.2.5	

Florida Standards	Correlation to CTE Program Standard #
32.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
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33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Electrocardiograph Aide.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
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33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
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33.06 Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
33.07 Look for and make use of structure. MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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 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
34.01 Locate the heart and surrounding structures.	LAFS.1112.RI.3.7	
34.02 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	
34.03 Trace the flow of blood through the cardiopulmonary system.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
34.01 Identify and describe the electrical conduction system.		
34.02 Describe the function of the autonomic nervous system.		
34.03 Describe a patient demonstrating poor perfusion and understand the importance of rapid reporting.		
35.0 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
35.01 Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.	LAFS.1112.W.2.4	
35.02 Maintain a safe and efficient work environment.	LAFS.1112.SL.1.2	
35.03 Maintain EKG equipment so it will be safe and accurate.	LAFS.1112.SL.1.2	
35.04 Implement appropriate Joint Commission patient safety goals and other applicable accrediting/regulatory agency guidelines.	LAFS.1112.SL.1.2	
36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities--The		SC.912.L.14.37

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
student will be able to:		SC.912.N.1.1 SC.912.P.10.20 SC.912.P.12.2 SC.912.P.12.9
36.01 Calibrate and standardize the cardiograph instrument.	LAFS.1112.SL.1.2	
36.02 Identify three types of lead systems.	LAFS.1112.SL.2.5 LAFS.1112.RI.3.7	
36.03 Demonstrate proper lead placement including lead placement for patients with special needs to include pediatric, posterior and right sided EKGs.	LAFS.1112.SL.1.2	
36.04 Identify artifacts and mechanical problems.	LAFS.1112.SL.1.2	
36.05 Perform a 12 lead EKG.	LAFS.1112.SL.2.5	
36.06 Recognize normal sinus rhythm.	LAFS.11.12.RI.3.7 LAFS.1112.SL.1.2	
36.07 Report any rhythm that is not normal sinus rhythm.	LAFS.1112.SL.2.5	
36.08 Use documentation skills to identify electrocardiographs.	LAFS.1112.RI.2.4 LAFS.1112.RI.3.7	
36.09 Recognize and respond cardiac emergency as seen on the EKG and understand the importance of rapid reporting.	LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	
36.10 Use documentation skills to identify electrocardiographs.	LAFS.1112.SL.2.4	
37.0 Perform patient care techniques in the health care facility--The student will be able to:		SC.912.N.1.1
37.01 Describe the physical and mental preparation of the patient for EKG testing.	LAFS.1112.W.2.4	
37.02 Identify patient and verify the requisition order.	LAFS.1112.W.2.4	
37.03 Prepare patient for cardiovascular diagnostic testing.	LAFS.1112.SL.2.4	
37.04 State precautions required when performing diagnostic procedures.	LAFS.1112.SL.2.4	
37.05 Convey the importance of maintaining a safe patient environment and evaluate potential hazards in each environment.		

Additional Information

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

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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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31	
Standard Length	3 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *([See DOE approved list](#))
	Emergency Medical Responder 3	REG NURSE 7 G PARAMEDIC @7 7G MED PROF 7 G EMT 7G LAW ENF @7 G CORR OFF 7G PUB SERV 7G FIRE FIGHT @7 G PRAC NURSE @7 %7%G (Must be a Registered Nurse)
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	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
> 8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417171	Emergency Medical Responder 3	1 credit	53-3011	2	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Emergency Medical Responder.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Emergency Medical Responder.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Emergency Medical Responder.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31- 5165 encompass competencies specific to Emergency Medical Responder 3:

31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Emergency Medical Responder.

32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Emergency Medical Responder.

33.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Emergency Medical Responder.

34.0   Demonstrate an understanding of the roles and responsibilities of the Emergency Medical Responder.

35.0   Demonstrate an ability to communicate effectively as part of the EMS team.

36.0   Demonstrate an understanding of medicolegal aspects.

37.0   Determine and record vital signs of a sick or injured person.

38.0   Use medical identification devices.

39.0   Conduct a primary assessment of problems that are a threat to life if not corrected immediately.

40.0   Demonstrate BLS procedures

41.0   Recognize and control bleeding.

42.0   Recognize and control shock.

43.0   Understand the importance of emergency medications.

44.0   Demonstrate understanding of airway management, respiration and artificial ventilation.

45.0   Provide secondary assessment.

46.0   Identify musculo-skeletal injuries.

47.0   Demonstrate proper immobilization of an Cervical/Spinal injury.

48.0   Demonstrate proper extremity immobilization as well as other immobilization for other injuries (pelvis, ribs).

49.0   Provide emergency evacuation and transfer of a sick and/or injured person

50.0   Identify and provide initial care for a sick and/or injured patient

51.0   Identify and care for patients who are in special situations

52.0   Provide triage to victims of multiple casualty incidents

53.0   Recognize life-threatening situations

54.0   Recognize entrapment situations

55.0   Assist with emergency childbirth

56.0   Identify critical incident stressors

Florida Department of Education
Student Performance Standards

<u>**Health Science Core:**</u>

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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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 a Emergency Medical Responder, demonstrating correct medical procedures for various emergency situations, proficiency in the appropriate instruments used, as well as a foundation in the musculo-skeletal system of the body.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Emergency Medical Responder.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important	

Florida Standards	Correlation to CTE Program Standard #
issues that remain unresolved. LAFS.1112.RST.2.6	
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Emergency Medical Responder .	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.2.5	
	32.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
	32.03	Research to Build and Present Knowledge	
	32.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	32.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	32.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
	32.04	Range of Writing	
	32.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.1112.WHST.4.10	
33.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Emergency Medical Responder.		
	33.01	Make sense of problems and persevere in solving them.	
		MAFS.K12.MP.1.1	
	33.02	Reason abstractly and quantitatively.	
		MAFS.K12.MP.2.1	
	33.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	33.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	33.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	33.06	Attend to precision.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.		
	MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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 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
34.01 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	
34.02 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	
34.03 Describe principles of safely operating a ground ambulance.	LAFS.1112.RI.2.4 LAFS1112.RI.3.7 LAFS.1112.RI.4.10 LAFS.1112.W.1.2 LAFS.1112.W.2.4 LAFS.11.12.W.4.10	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.4 LAFS.1112.L.1.1 LAFS.1112.L.1.2	
34.04 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	
34.05 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	
34.06 Discuss and demonstrate Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 (q)(6)(i) –First Responder Awareness Level http://www.hazwopercertification.net/	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	
35.0 Demonstrate an ability to communicate effectively as part of the EMS team--The student will be able to:		
35.01 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	
35.02 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	
35.03 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	
35.04 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	
35.05 Recognize simple medical prefixes, suffixes and combining words.	LAFS.1112.L.1.1 LAFS.1112.L.3.4 LAFS.1112.L.3.6	
36.0 Demonstrate an understanding of medicolegal aspects–The student will be able to:		SC.912.L.16.10
36.01 Describe and demonstrate an understanding of the medicolegal aspects of a	LAFS.1112.RI.4.10	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
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.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	
36.02 Practice within medicolegal standards.		
37.0 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
37.01 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	
37.02 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	
38.0 Use medical identification devices–The student will be able to:		
38.01 Identify the most commonly used medical identification devices.	LAFS.1112.L.3.6	
38.02 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	
39.0 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
39.01 Determine and record the level of consciousness of the injured person.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
39.02 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	
39.03 Recognize when immediate correction is necessary.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
39.04 Assess patient and determine if the patient has a life threatening condition.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
39.05 Use spinal precautions as appropriate	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.6	
40.0 Demonstrate BLS procedures–The student will be able to:		SC.912.L.14.36 SC.912.L.14.37 SC.912.P.10.15
40.01 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	
40.02 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	
40.03 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	
41.0 Recognize and control bleeding–The student will be able to:		SC.912.L.14.34 SC.912.L.14.40
41.01 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	
41.02 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	
41.03 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	
41.04 Care for a patient who exhibits the signs and symptoms of internal bleeding.	LAFS.1112.SL1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
42.0 Recognize and control shock–The student will be able to:		SC.912.P.10.15
42.01 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	
42.02 Provide anti-shock measures as a part of routine patient care.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
43.0 Understand the importance of emergency medications–The student will be able to:		SC.912.L.14.44
43.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
43.02 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	
44.0 Demonstrate understanding of airway management, respiration and artificial ventilation–The student will be able to:		SC.912.L.14.43
44.01 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	
44.02 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	
44.03 Use available mechanical devices to assure the maintenance of an open airway and assist ventilation (i.e. pocket mask, Bag-valve mask, Sellick's maneuver)	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
44.04 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	
44.05 Describe and demonstrate airway management utilizing of upper airway suctioning.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
45.0 Provide secondary assessment–The student will be able to:		SC.912.N.1.1
45.01 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	
45.02 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	
45.03 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	
46.0 Identify musculo-skeletal 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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
46.01 Identify the various types of musculo-skeletal injuries.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.L.3.6	
46.02 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	
47.0 Demonstrate proper immobilization of an 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
47.01 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	
47.02 Maintain in-line immobilization of cervical spine	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
47.03 Place proper fitting rigid extrication-type cervical collar	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
47.04 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	
47.05 Secure patient to immobilization device	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
48.0 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
48.01 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	
48.02 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	
48.03 Place proper fitting splint on extremity	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.6	
48.04 Reassesses 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	
49.0 Provide emergency evacuation and transfer of a sick and/or injured person–The student will be able to:		SC.912.N.1.1
49.01 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	
49.02 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	
49.03 Maintain safety precautions during evacuation and transfer.	LAFS.1112.SL1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6	
50.0 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 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
50.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.RI.3.7	
50.02 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	
50.03 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	
50.04 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	
50.05 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	
50.06 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	
50.07 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	
50.08 Identify and care for a patient who has a foreign body in the eye, utilizing patient assessment.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4 LAFS.1112.SL.2.6 LAFS.1112.RI.3.7	
50.09 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	
50.10 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	
51.0 Identify and care for patients who are in special situations–The student will be able to:		
51.01 Identify patients who have special needs.	LAFS.1112.SL.1.2 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.6	
	LAFS.1112.RI.3.7	
51.02 Care for injured/ill children.	LAFS.1112.SL.1.2	
	LAFS.1112.SL.2.4	
	LAFS.1112.SL.2.6	
51.03 Care for the injured/ill elderly.	LAFS.1112.SL.1.2	
	LAFS.1112.SL.2.4	
	LAFS.1112.SL.2.6	
51.04 Care for the injured/ill physically disabled.	LAFS.1112.SL.1.2	
	LAFS.1112.SL.2.4	
	LAFS.1112.SL.2.6	
51.05 Care for the injured/ill developmentally disabled.	LAFS.1112.SL.1.2	
	LAFS.1112.SL.2.4	
	LAFS.1112.SL.2.6	
52.0 Provide triage to victims of multiple casualty incidents–The student will be able to:		
52.01 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	
52.02 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	
52.03 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	
52.04 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	
52.05 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	
52.06 Demonstrate knowledge of the operating procedures during a terrorist event or during a natural or man-made disaster.	LAFS.1112.RI.3.7	
53.0 Recognize life-threatening situations–The student will be able to:		
53.01 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	
54.0 Recognize entrapment situations–The student will be able to:		SC.912.P.10.3
54.01 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	
54.02 Use available equipment safely to gain access to persons who are entrapped.	LAFS.1112.SL.1.2	
54.03 Use available equipment safely to disentangle persons from mechanisms of entrapment.	LAFS.1112.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
55.0 Assist with emergency childbirth–The student will be able to:		SC.912.L.14.33 SC.912.L.14.41
55.01 Evaluate a mother to determine whether delivery is imminent.	LAFS.1112.SL.1.2	
55.02 Assist with a normal delivery.		
55.03 Care for the mother and baby.		
55.04 Identify abnormal childbirth situations and care for the mother and baby within the Emergency Medical Responder's capabilities.	LAFS.1112.SL.1.2	
56.0 Identify critical incident stressors–The student will be able to:		SC.912.L.14.52 SC.912.L.16.8
56.01 Identify stressors which may affect the performance of a Emergency Medical Responder.	LAFS.1112.SL.1.2	
56.02 Identify stressors which may affect the behavior of a sick or injured person.	LAFS.1112.SL.1.2	
56.03 Carry out procedures to minimize critical incident stress.		

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

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

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 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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Home Health Aide (Secondary)
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	Health Science Core	ANY HEALTH OCCUP G *([See DOE approved list](#))
	Home Health Aide 3	REG NURSE 7 G PRAC NURSE @7 %7%G *(Must be a Registered Nurse)
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-1011 Home Health Aides 31-9099 Healthcare Support Workers, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417191	Home Health Aide 3	.5 credit	31-1011	2	VO

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Home Health Aide.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Home Health Aide.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Home Health Aide.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-45 encompass competencies specific to Home Health Aide 3:

31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Home Health Aide.
32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Home Health Aide.
33.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Home Health Aide.
34.0   Use verbal and written communications specific to Home Health Aide.
35.0   Demonstrate legal and ethical responsibilities specific to Home Health Aide.
36.0   Perform physical comfort and safety functions specific to Home Health Aide.
37.0   Provide personal patient care.
38.0   Perform patient care procedures.
39.0   Apply principles of nutrition.
40.0   Provide care for geriatric patients.
41.0   Apply the principles of infection control specific to Home Health Aide.
42.0   Provide bio-psycho-social support.
43.0   Perform supervised management functions, following the patient plan of care.
44.0   Assist with rehabilitative activities.
45.0   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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Home Health Aide.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.1112.RST.2.6	
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Home Health Aide.	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	

Florida Standards	Correlation to CTE Program Standard #
32.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Home Health Aide.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
33.07 Look for and make use of structure. MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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 Use verbal and written communications specific to home health aide–The student will be able to:		SC.912.N.1.1
34.01 Obtain specified data from patient and family.	LAFS.1112.SL.1.1a	
34.02 Utilize verbal and written information to assist with the patient's plan of care.	LAFS.1112.L.1.1 LAFS.1112.SL.1.1d	
35.0 Demonstrate legal and ethical responsibilities specific to home health aide–The student will be able to:		SC.912.L.16.10
35.01 Demonstrate legal and ethical behavior within the role and scope of home health aide responsibilities.		
35.02 Follow policies and procedures concerning care as directed by the employer affecting the health, safety, and well-being of patients in the home setting.		
35.03 Recognize and report signs of substance abuse.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
35.04 Follow legal guidelines in charting.	LAFS.1112.RI.3.8	
35.05 Exhibit behavior supporting and promoting residents' rights.	LAFS.1112.SL.2.4	
35.06 Recognizes and follows limits if job restrictions.	LAFS.1112.RI.3.8	
36.0 Perform physical comfort and safety functions specific to home health aide–The student will be able to:		
36.01 Maintain patient units in the home.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.02 Adjust bed and side-rails.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.03 Transfer patient with mechanical lifters using proper body mechanics and patient safety measures.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
36.04 Turn and position patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.05 Apply protective devices as directed (e.g. vest or belt).	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.06 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	
36.07 Assist patient to dangle.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.08 Assist patient in ambulation, including the use of crutch, cane, or walker.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.09 Assist patient in using wheelchair.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.10 Assist patient with care and use of prosthetic/orthotic devices.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
36.11 Administer back rub.	LAFS1112.SL.1.1d LAFS1112.L.1.1	
36.12 Identify emergency evacuation procedures with adaptations to the home setting.	LAFS.1112.SL.2.4	
36.13 Implement appropriate joint commission patient safety goals.	LAFS.1112.SL.2.4	
37.0 Provide personal patient care–The student will be able to:		
37.01 Give bed bath; observe and report changes in patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.02 Practice procedures for safety in the bathroom including the use of adaptive shower equipments 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	
37.03 Assist with shower or tub bath, including use of specialty tubs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.04 Assist patient with sink, tub, shower, or bed shampoo.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.05 Shave patient.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.06 Groom patient, including hair, skin, foot, and nail care.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.07 Assist with and/or administer oral hygiene.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.08 Assist patient with toileting.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
37.09 Assist patient to dress.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
37.10 Assist patient with meals.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.0 Perform patient care procedures–The student will be able to:		
38.01 Make unoccupied/occupied bed.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.02 Assist patient in passive range-of-motion exercises.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.03 Apply anti-embolic hose and sequential compression devices.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.04 Collect, strain, and/or test routine urine specimen.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.05 Monitor catheter drainage system.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.06 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	
38.07 Observe, record, and report patient's emesis.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
38.08 Assist patient with moist and dry heat applications to include the sitz bath.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.09 Assist with ostomy care.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.10 Collect stool specimen.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
38.11 Care for patients receiving oxygen therapy.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
39.0 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
39.01 Identify nutrients and food groups.	LAFS.1112.RI.3.8	
39.02 Explain regional, cultural, and religious food preferences.	LAFS.1112.SL.1.2	
39.03 Describe special diets.	LAFS.1112.RI.3.8	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
39.04 List factors that must be considered when purchasing food.		
39.05 Prepare a basic food plan.	LAFS.1112.RI.3.8	
39.06 List factors that must be considered when storing food.		
39.07 Identify methods of maintaining fluid balance.		
39.08 Identify methods of food preparation.		
39.09 Discuss preparation and serving of trays in the home.	LAFS.1112.SL.1.2	
40.0 Provide care for geriatric patients–The student will be able to:		
40.01 Identify safety principles, as related to the elderly.	LAFS.1112.RI.1.3	
40.02 Describe general characteristics, particular needs, and problems of the elderly.	LAFS.1112.RI.1.3	
40.03 Identify attitudes and living habits that promote positive mental and physical health for the elderly.	LAFS.1112.RI.1.3	
40.04 Distinguish between fact and fallacy about the aging process.	LAFS.1112.W.3.8	
40.05 Identify community resources and services available to the elderly.	LAFS.1112.RI.1.3 LAFS.1112.W.2.6	
40.06 Apply Reality Orientation Techniques and Validation Therapy.	LAFS.1112.SL.1.1b LAFS.1112.SL.2.5	
40.07 Provide and involve patients in diversional activities.	LAFS.1112.SL.1.1b LAFS.1112.SL.2.5	
40.08 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	
40.09 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).	LAFS.1112.SL.2.5	
41.0 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
41.01 Provide care for patients with infectious diseases in the home.	LAFS.1112.SL.2.5	
41.02 Follow isolation procedures with food tray, garments, and other materials in the home.	LAFS.1112.SL.2.5	
41.03 Utilize universal (standard) precautions in all home care.	LAFS.1112.SL.2.5	
42.0 Provide bio-psycho-social support–The student will be able to:		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
42.01 Discuss family roles and their significance to health.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
42.02 Respond to patient and family emotional needs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
43.0 Perform supervised management functions, following the patient plan of care–The student will be able to:		
43.01 Organize patient-care assignments.	LAFS.1112.W.4.1	
43.02 Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
44.0 Assist with rehabilitative activities–The student will be able to:		
44.01 List the purposes of restorative (rehabilitation) programs.	LAFS.1112.W.2.6	
44.02 Assist patient with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
44.03 Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
45.0 Perform home health-care services–The student will be able to:		
45.01 Follow an established work plan with the patient and family.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
45.02 Perform patient-related cleaning tasks and laundry.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	
45.03 Identify methods for medication storage.		
45.04 Assist patient with taking self-administered prescribed medication in the home, and identify possible side effects and emergency procedures for adverse reactions.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1 LAFS.1112.SL.1.2	
45.05 Demonstrate how to improvise equipment and supplies in the home.	LAFS.1112.SL.1.1d LAFS.1112.L.1.1	

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

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

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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

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

Secondary – Career Preparatory		
Program Number	8417200	
CIP Number	0317030402	
Grade Level	9-12, 30, 31	
Standard Length	4 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *(See DOE approved list)
	Medical Laboratory Assisting 3 and 4	LAB ASST @7 7G LAB TECH @7 7G TEC MED !7 G
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	29-2012 Medical and Clinical Laboratory Technicians 31-9099 Healthcare Support Workers, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
> 8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417201	Medical Laboratory Assisting 3	1 credit	29-2012	3	VO
	8417202	Medical Laboratory Assisting 4	1 credit	29-2012	3	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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 %	0/69 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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Medical Laboratory Assisting.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Medical Laboratory Assisting.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Medical Laboratory Assisting.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-50 encompass Medical Laboratory Assisting:

31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Medical Laboratory Assisting.

32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Medical Laboratory Assisting.

33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Medical Laboratory Assisting.

34.0 Demonstrate accepted professional, communication, and interpersonal skills.

35.0 Discuss phlebotomy in relation to the health care setting.

36.0 Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.

37.0 Recognize and identify collection reagents supplies, equipment and interfering chemical substances.

38.0 Demonstrate skills and knowledge necessary to perform phlebotomy.

39.0 Practice infection control following standard precautions

40.0 Practice accepted procedures of transporting, accessioning and processing specimens.

41.0 Practice quality assurance and safety.

42.0 Identify the federal and state laws which serve to regulate the provision of laboratory services, including CLIA, Florida Statutes, and Florida Administrative Code.

43.0 Demonstrate a basic understanding of ICD and CPT coding Systems.

44.0 Demonstrate basic knowledge of microbiology.

45.0 Demonstrate basic knowledge of urinalysis.

46.0 Demonstrate basic knowledge of clinical chemistry.

47.0 Demonstrate basic knowledge of hematology.

48.0 Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).

49.0 Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.

50.0 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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Medical Laboratory Assisting.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important	

Florida Standards	Correlation to CTE Program Standard #
issues that remain unresolved. LAFS.1112.RST.2.6	
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Medical Laboratory Assisting.	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.2.5	
	32.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
	32.03	Research to Build and Present Knowledge	
	32.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	32.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	32.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
	32.04	Range of Writing	
	32.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.1112.WHST.4.10	
33.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Medical Laboratory Assisting.		
	33.01	Make sense of problems and persevere in solving them.	
		MAFS.K12.MP.1.1	
	33.02	Reason abstractly and quantitatively.	
		MAFS.K12.MP.2.1	
	33.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	33.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	33.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	33.06	Attend to precision.	

Florida Standards	Correlation to CTE Program Standard #
MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.	
MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.	
MAFS.K12.MP.8.1	

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 accepted professional, communication, and interpersonal skills. – The student will be able to:		
34.01 Demonstrate the appropriate professional behavior of a phlebotomist.		
34.02 Explain to the patient the procedure to be used in specimen collection.	LAFS.1112.SL.2.4 LAFS.1112.RI.1.3	
34.03 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	
34.04 Describe the scope of practice (job skills and duties) for a phlebotomist.		
34.05 List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.		
34.06 Explain the importance of continuing education in relation to certification to maintain competency and skills.		
35.0 Discuss phlebotomy in relation to the health care setting. – The student will be able to:		
35.01 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	
35.02 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	
35.03 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	
36.0 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
	36.01	Describe and define major body systems with emphasis on the circulatory system.	LAFS.1112.RI.2.4 LAFS.1112.W.2.4	
	36.02	List and describe the main superficial veins used in performing venipuncture.	LAFS.1112.W.2.4	
	36.03	Locate the most appropriate sites(s) for capillary and venipuncture.		
	36.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.	LAFS.1112.W.2.4	
	36.05	Compare and contrast between serum and plasma as it relates to blood collection.		
	36.06	Discuss hemostasis as it relates to blood collection.		
37.0		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
	37.01	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	
	37.02	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	
	37.03	Identify and discuss proper use of supplies used in collecting micro-specimens.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6 LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	
	37.04	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	
	37.05	Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.	LAFS.1112.W.2.4	
	37.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.	LAFS.1112.W.2.4	
	37.07	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	
38.0	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
	38.01 Follow approved procedure for completing a laboratory requisition form.		
	38.02 Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.	LAFS.1112.RI.2.4	
	38.03 Demonstrate knowledge of established protocol for patient and specimen identification in the Physician Office Laboratory (POL).		
	38.04 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	
	38.05 List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.	LAFS.1112.W.2.4 LAFS.1112.RI.2.4	
	38.06 Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.		
	38.07 Describe the correct order of draw.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
	38.08 Describe the use of barcoding systems used for specimen collection.		
	38.09 Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.		
	38.10 Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.	LAFS.1112.W.2.4	
	38.11 Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.		
	38.12 Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.	LAFS.1112.W.2.4	
	38.13 Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.	LAFS.1112.W.2.4	
	38.14 Demonstrate the proper procedure for collecting blood cultures.		
	38.15 Discuss the effects of hemolysis and methods of prevention.		
	38.16 Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.		
39.0	Practice infection control following standard precautions. – The student will be able to:		SC.912.L.14.52 SC.912.N.1.1

	39.01	Define the term "nosocomial/ hospital acquired infection."	LAFS.1112.W.2.4	
	39.02	Describe and practice procedures for infection prevention including hand washing skills.	LAFS.1112.W.2.4	
	39.03	Discuss and perform transmission based precautions.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
	39.04	Identify potential routes of infection and their complications.	LAFS.1112.RI.2.4	
40.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:			SC.912.N.1.1
	40.01	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	
	40.02	Demonstrate knowledge of accessioning procedures.		
	40.03	Describe the significance of time constraints for specimen collection, transporting and delivery.	LAFS.1112.W.2.4 LAFS.1112.SL.2.6	
	40.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.		
41.0	Practice quality assurance and safety. – The student will be able to:			SC.912.N.1.1
	41.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.		
	41.02	Demonstrate knowledge of and practice appropriate patient safety.	LAFS.1112.SL.1.1a LAFS.1112.W.1.2b	
	41.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.		
	41.04	Follow documentation procedures for work related accidents.	LAFS.1112.W.1.2b	
	41.05	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.

Florida Standards	Correlation to CTE Program Standard #
30.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Medical Laboratory Assisting.	
30.01 Key Ideas and Details	
30.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
30.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
30.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
30.02 Craft and Structure	
30.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
30.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
30.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important	

		issues that remain unresolved.	
		LAFS.1112.RST.2.6	
	30.03	Integration of Knowledge and Ideas	
	30.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
		LAFS.1112.RST.3.7	
	30.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
		LAFS.1112.RST.3.8	
	30.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
		LAFS.1112.RST.3.9	
	30.04	Range of Reading and Level of Text Complexity	
	30.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	30.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
		LAFS.1112.RST.4.10	
31.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Medical Laboratory Assisting.		
	31.01	Text Types and Purposes	
	31.01.1	Write arguments focused on discipline-specific content.	
		LAFS.1112.WHST.1.1	
	31.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
		LAFS.1112.WHST.1.2	
	31.02	Production and Distribution of Writing	
	31.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
		LAFS.1112.WHST.2.4	
	31.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.2.5	
	31.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
	31.03	Research to Build and Present Knowledge	
	31.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	31.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	31.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
	31.04	Range of Writing	
	31.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.1112.WHST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Medical Laboratory Assisting.		
	32.01	Make sense of problems and persevere in solving them.	
		MAFS.K12.MP.1.1	
	32.02	Reason abstractly and quantitatively.	
		MAFS.K12.MP.2.1	
	32.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	32.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	32.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	32.06	Attend to precision.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.6.1	
32.07 Look for and make use of structure.		
	MAFS.K12.MP.7.1	
32.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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
42.0 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:		
42.01 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	
42.02 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	
42.03 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	
42.04 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	
42.05 Demonstrate an understanding of the concepts of "scope of practice", "professional judgment", and "duty/obligation to report".		
43.0 Demonstrate a basic understanding of ICD and CPT coding Systems.–The student will be able to:		SC.912.N.1.1
43.01 Explain the characteristics of the International Classification of Disease System (ICD), and its important function in substantiating the clinical record.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c	
43.02 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	
43.03 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
		LAFS.1112.L.3.4c	
	43.04 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	
	43.05 Review the concept of congressionally –mandated screening tests under the Medicare Program.	LAFS.1112.L.3.4c	
44.0	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
	44.01 Perform techniques of microbiology related to disinfection techniques.		
	44.02 Discuss techniques of microbiology related to isolation techniques.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
	44.03 Perform techniques of microbiology related to sterilization techniques.		
	44.04 Perform techniques of microbiology related to slide preparation.		
	44.05 Perform principles and use of the microscope.	MAFS.912.N-Q.1.3	
	44.06 Understand the staining and microscopic examination of gram stains.	LAFS.1112.L.3.6	
	44.07 Discuss techniques of microbiology related to inoculation and transfer of cultures.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6	
	44.08 Perform basic techniques of microbiology	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.4c LAFS.1112.L.3.6	
	44.09 Discuss classification, composition and preparation of culture media.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.N-Q.1.3	
45.0	Demonstrate basic knowledge of urinalysis. –The student will be able to:		SC.912.L.14.47 SC.912.N.1.1
	45.01 Understand urinalysis techniques related to normal and abnormal components of the urine.	LAFS.1112.L.3.6 MAFS.912.S-IC.2.6	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
45.02 Perform urinalysis techniques related to collection and preservation of specimens.		
45.03 Perform urinalysis techniques related to physical properties of urine		
45.04 Perform urinalysis techniques related to dipstick urine pH and describe clinical significance.	MAFS.912.S-IC.2.6 MAFS.912.N-Q.1.3	
45.05 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	
45.06 Perform dipstick or tablet (non-automated) urinalysis techniques related to performance of chemical tests.		
45.07 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	
45.08 Perform urinalysis techniques related to principles and use of centrifuge.	MAFS.912.N-Q.1.3	
46.0 Demonstrate basic knowledge of clinical chemistry. –The student will be able to:		SC.912.N.1.1 SC.912.P.10.18
46.01 Perform techniques of clinical chemistry related to metric measurement.	MAFS.912.N-Q.1.3	
46.02 Perform techniques of clinical chemistry related to labware and clinical equipment.		
46.03 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	
46.04 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	
46.05 Discuss the importance of Quality Assurance as it relates to patient results.		
46.06 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	46.07 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	
47.0	Demonstrate basic knowledge of hematology.-The student will be able to:		SC.912.L.14.34 SC.912.N.1.1
	47.01 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	
	47.02 Perform techniques of hematology related to preparation and staining.		
	47.03 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	
	47.04 Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.		
	47.05 Perform techniques of hematology related to spun hematocrit tests.		
	47.06 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	
	47.07 Perform techniques of hematology related to hemoglobin tests.	MAFS.912.S-IC.2.6, MAFS.912.S-MD.2.7	
	47.08 Discuss techniques of hematology related to calculation of red blood cell indices.	LAFS.1112.W.1.2b,c LAFS.1112.SL.1.1a LAFS.1112.L.3.6 MAFS.912.S-IC.1.2 MAFS.912.S-IC.2.6	
	47.09 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	

CTE Standards and Benchmarks			FS-M/LA	NGSSS-Sci
			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	
48.0	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
	48.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:		
		48.01.01 Test principle		
		48.01.02 Storage & Stability		
		48.01.03 Internal vs. External Quality Control		
		48.01.04 Specimen collection & preparation		
		48.01.05 Directions for use		
		48.01.06 Interpretation of results		
		48.01.07 Interfering substances		
	48.02	Demonstrate and discuss knowledge of lot numbers use and importance in regard to both kits and reagents.		
	48.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.		
	48.04	Explain the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.		
49.0	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
	49.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.		
	49.02	Demonstrate competence in instrument maintenance.		
	49.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.		
	49.04	Identify normal limits and associate abnormal results with disease or disorders.		
	49.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
50.0 Successfully complete learning experiences in the clinical setting–The student will be able to:		SC.912.N.1.1
50.01 Observe and participate as appropriate in skills outlined in outcomes for medical lab assisting.		
50.02 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

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

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31	
Standard Length	3 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *([See DOE approved list](#))
	Nursing Assistant 3	REG NURSE 7 G PRAC NURSE @7 %7%G *(Must be a Registered Nurse)
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-1014 Nursing Assistants 31-9099 Healthcare Support Workers, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
> 8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417211	Nursing Assistant 3	1 credit	31-1014	3	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

Regulated Programs

Successful completion of this program from an approved school prepares the student for certification for employment as a Nursing Assistant in a nursing home, in accordance with Chapter 464.203, Florida Statutes. To be approved, the course must be taught by a registered nurse. 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. Nursing assistants do not need to be certified except to work in nursing homes unless it is a condition for employment in other institutions. This program includes both Acute and Long Term Care.

Students will perform nursing skills in the clinical and simulated laboratory settings under the supervision of a qualified registered nurse instructor. The recommended teacher/student ratio in the clinical area is 1 to 12, but the maximum is 1 to 15. Clinical and simulated laboratory learning experiences must correlate with 80 hours of didactic instruction. For nursing assistant certification a minimum of 40 hours clinical experiences must be obtained. Simulated labs are not a substitute for clinical experience. Twenty hours of this clinical experience must be in a licensed nursing home.

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

Nursing assisting clinical requirements can be found in F.A.C. 64B9-15.006.

This program must be taught by a Registered Nurse meeting the qualifications as set forth in 64B9-15.004 (3) (a) F.A.C.

Persons Who Are Enrolled In A State Approved Nursing Assistant Training Program, Approved By The Department Of Education, May Be Employed By A Licensed Nursing Home For A Period Of Four Months. The Certification Requirements Must Be Met Within Four Months Of Such Initial Employment, However.

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.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Nursing Assistant.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Nursing Assistant.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Nursing Assistant.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-46 encompass competencies specific to Nursing Assistant:

31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Nursing Assistant.

32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Nursing Assistant.
33.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Nursing Assistant.
34.0   Use verbal and written communications specific to nurse assisting.
35.0   Demonstrate legal and ethical responsibilities specific to nurse assisting.
36.0   Perform physical comfort and safety functions specific to nurse assisting.
37.0   Provide personal patient care.
38.0   Perform patient care procedures.
39.0   Apply principles of nutrition.
40.0   Provide care for geriatric patients.
41.0   Apply the principles of infection control specific to nursing assisting.
42.0   Provide biological, psychosocial, and social support.
43.0   Perform supervised organizational functions, following the patient plan of care.
44.0   Assist with restorative (rehabilitative) activities.
45.0   Perform skills related to the hospital setting.
46.0   Provide care for the adult patient.

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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards			Correlation to CTE Program Standard #
31.0	Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Nursing Assistant.		
	31.01	Key Ideas and Details	
		31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
		31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
		31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
	31.02	Craft and Structure	
		31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
		31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	

	31.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
		LAFS.1112.RST.2.6
31.03	Integration of Knowledge and Ideas	
	31.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.
		LAFS.1112.RST.3.7
	31.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
		LAFS.1112.RST.3.8
	31.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
		LAFS.1112.RST.3.9
31.04	Range of Reading and Level of Text Complexity	
	31.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.
	31.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.
		LAFS.1112.RST.4.10
32.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Nursing Assistant.	
32.01	Text Types and Purposes	
	32.01.1	Write arguments focused on discipline-specific content.
		LAFS.1112.WHST.1.1
	32.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
		LAFS.1112.WHST.1.2
32.02	Production and Distribution of Writing	
	32.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
		LAFS.1112.WHST.2.4
	32.02.2	Develop and strengthen writing as needed by planning, revising, editing,

		rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5
	32.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6
32.03	Research to Build and Present Knowledge	
	32.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7
	32.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8
	32.03.3	Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9
32.04	Range of Writing	
	32.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10
33.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Nursing Assistant.	
33.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04	Model with mathematics. MAFS.K12.MP.4.1	
33.05	Use appropriate tools strategically.	

Florida Standards	Correlation to CTE Program Standard #
MAFS.K12.MP.5.1	
33.06 Attend to precision.	
MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.	
MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.	
MAFS.K12.MP.8.1	

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 Use verbal and written communications specific to nurse assisting–The student will be able to:		
34.01 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	
34.02 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	
34.03 Demonstrate use of the intercom.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
35.0 Demonstrate legal and ethical responsibilities specific to nurse assisting–The student will be able to:		
35.01 Demonstrate legal and ethical behavior within the role and scope of nursing assistant responsibilities, including conflict resolution.	LAFS.1112.RI.3.8	
35.02 Describe the purpose of the chain of command (i.e., to resolve patient or employee problems.	LAFS.910.RI.2.4 LAFS.910.SL.2.4 LAFS.1112.W.1.2 LAFS.1112.RI.2.4 LAFS.1112.SL.2.4	
35.03 Follow policies and procedures affecting the health, safety, and well-being of patients.		
35.04 Recognize and report signs of substance abuse.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.4	
35.05 Follow legal guidelines in charting.	LAFS.1112.RI.3.8	
35.06 Exhibit behavior supporting and promoting residents' rights.	LAFS.1112.SL.2.4	
36.0 Perform physical comfort and safety functions specific to nurse assisting–The student will be able to:		
36.01 Maintain patient units and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.02 Maintain service areas on the units including supplies and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.03 Observe, report, and note changes in the patient's behavior daily, including mental awareness.	LAFS.1112.RI.1.2 LAFS.1112.W.1.2B	
36.04 Adjust bed and side-rails.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.05 Transfer patient using mechanical lifters using proper body mechanics and patient safety measures.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.06 Turn and position patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.07 Apply protective devices as directed (e.g., vest and belt).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.08 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	
36.09 Assist patient to dangle.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.10 Assist patient in ambulation, including the use of crutch, cane, or walker.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.11 Assist patient in using wheelchair.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.12 Assist patient with care and use of prosthetic/orthotic devices.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.13 Administer back rub.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
36.14 Describe emergency procedures utilized in the clinical area(s).	LAFS.910.W.I.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	
37.0 Provide personal patient care–The student will be able to:		
37.01 Give bed bath; observe and report changes in patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
37.02 Assist with shower or tub bath, including the use of specialty tubs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.03 Assist patient with sink, tub, shower, or bed shampoo.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.04 Shave patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.05 Groom patient, including hair, skin, foot, and nail care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.06 Assist with and/or administer oral hygiene including denture care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.07 Assist patient with toileting.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.08 Assist patient to dress.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.09 Assist patient with meals.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.10 Provide bowel and bladder training.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.11 Give perineal care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
37.12 Empty urinary drainage.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.0 Perform patient care procedures–The student will be able to:		
38.01 Demonstrate ability to accurately measure and record 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	
38.02 Admit patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.03 Transfer patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.04 Discharge patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.05 Make unoccupied/occupied bed.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.06 Measure and record patient's height and weight.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
38.07 Assist patient in passive range-of-motion exercises.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.08 Apply anti-embolic hose and sequential compression devices.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.09 Collect, strain, and/or test routine urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.10 Collect timed urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
38.11 Monitor catheter drainage system.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.12 Collect clean-catch (midstream-voided) urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.13 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.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
38.14 Observe, record, and report patient's emesis.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
38.15 Monitor and assist with care of catheters.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.16 Assist with ostomy care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.17 Collect stool specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.18 Perform postmortem care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.19 Maintain patient-belongings list.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.20 Care for patients with nasal, gastrostomy, and/or intravenous tubes.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
38.21 Collect sputum specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
39.0 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
39.01 Identify nutrients and food groups.	LAFS.910.RI.1.2 LAFS.1112.RI.3.8 LAFS.1112.RI.1.2	
39.02 Explain regional, cultural, and religious food preferences.	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	
39.03 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	
39.04 Prepare a basic food plan.	LAFS.1112.RI.3.8 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
39.05 Check patient's diet tray for accuracy.	LAFS.1112.SL.1.2	
39.06 Identify methods of maintaining fluid balance.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
40.0 Provide care for geriatric patients–The student will be able to:		
40.01 Identify safety principles as related to the elderly.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
40.02 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	
40.03 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	
40.04 Distinguish between fact and fallacy about the aging process.	LAFS.1112.W.3.8	
40.05 Identify community resources and services available to the elderly.	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	
40.06 Apply Reality Orientation Techniques and Validation Therapy.	LAFS.1112.SL.1.1B	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.5	
40.07 Provide and involve patients in diversional activities.	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
40.08 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	
40.09 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).	LAFS.1112.SL.2.5	
40.10 Recognize and respond appropriately to symptoms of common diseases including dementia, depression/suicide and Alzheimer's.	LAFS.1112.RI.3.7	
41.0 Apply the principles of infection control specific to nursing assisting–The student will be able to:		
41.01 Provide care for patients with infectious diseases applying the principles of "Universal (Standard) Precautions" utilized with all patients as well as special procedures required.	LAFS.1112.SL.2.5	
41.02 Set up isolation unit using proper personal protective equipment (PPE) for all types of isolation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
41.03 Follow isolation procedure with food tray, garments, and other materials.	LAFS.1112.SL.2.5	
41.04 Collect specimen from patient in isolation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
42.0 Provide biological, psychological, and social support–The student will be able to:		
42.01 Discuss family roles and their significance to health.	LAFS.910.SL.1.1a LAFS.1112.SL.1.1A,D LAFS.1112.L.1.1	
42.02 Respond to patient and family emotional needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
43.0 Perform supervised organizational functions, following the patient plan of care–The student will be able to:		
43.01 Organize patient-care assignments.	LAFS.1112.W.4.1	
43.02 Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
44.0 Assist with restorative (rehabilitative) activities–The student will be able to:		
44.01 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	
44.02 Assist patient with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
44.03 Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.0 Perform skills related to the hospital setting–The student will be able to:		SC.912.L.14.11 SC.912.L.14.14 SC.912.L.14.51
45.01 Care for hospital equipment and supplies.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.02 Transfer patient to stretcher.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.03 Assist patient to apply binders.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.04 Care for patient in skin and skeletal traction.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.05 Assist with pre-operative and post-operative patient care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.06 Reinforce dressings.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
45.07 Practice nursing procedures from the nursing assistant module in hospital setting.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.0 Provide care for the adult patient–The student will be able to:		SC.912.L.14.6 SC.912.L.14.38 SC.912.L.14.39 SC.912.L.14.44
46.01 Assist with physical examination.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.02 Care for patients receiving oxygen therapy.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.03 Change an unsterile dressing.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.04 Take an apical pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
46.05 Take an apical-radial pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
46.06 Take pedal pulse.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.07 Give cast care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
46.08 Give artificial eye/contact lens care.	LAFS.1112.SL.1.1D	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.L.1.1	
46.09 Demonstrate understanding and knowledge of patients with common health problems.	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

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

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

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 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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31	
Standard Length	4 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *(See DOE approved list)
	Vision Care Assisting 3 and 4	TEC OPTICS 7G
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 29-2081 Opticians, Dispensing	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
> 8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417231	Vision Care Assisting 3	1 credit	29-2081	3	VO
	8417232	Vision Care Assisting 4	1 credit	29-2081	3	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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%

Courses											
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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-31 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Vision Care Assisting.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Vision Care Assisting.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Vision Care Assisting.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-43 encompass competencies specific to Vision Care Assisting 3 & 4:

31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Vision Care Assisting.
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Vision Care Assisting.
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Vision Care Assisting.
34.0 Demonstrate knowledge of the visual system
35.0 Gather patient history and all relevant data in preparation for a complete eye exam
36.0 Prepare patients for and assist in testing for eye disorders
37.0 Perform medical administrative office tasks
38.0 Recognize patient needs in relation to lens characteristics
39.0 Demonstrate knowledge of frame selection techniques used in a dispensing office setting
40.0 Demonstrate knowledge of frame adjustment and alignment
41.0 Demonstrate and perform basic skills relating to lenses
42.0 Edge, tint and inspect a pair of glass or plastic lenses and insert into a frame
43.0 Dispense optical supplies

Florida Department of Education
Student Performance Standards

<u>**Health Science Core:**</u>

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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Vision Care Assisting.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. LAFS.1112.RST.2.6	

31.03	Integration of Knowledge and Ideas	
	31.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
	31.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
	31.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
31.04	Range of Reading and Level of Text Complexity	
	31.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	31.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Vision Care Assisting.	
32.01	Text Types and Purposes	
	32.01.1	Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
	32.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
32.02	Production and Distribution of Writing	
	32.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
	32.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	
	32.02.3	Use technology, including the Internet, to produce, publish, and update	

Florida Standards	Correlation to CTE Program Standard #
individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Vision Care Assisting.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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 the visual system--The students will be able to:		
34.01 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
34.02 Describe the physiology of each part of the eye.	LAFS.1112.W.1.2	SC.912.L.14.19
34.03 Describe the visual pathway.	LAFS.1112.W.1.2	SC.912.L.14.24
34.04 Define refractive errors.	LAFS.1112.L.3.6	SC.912.P.10.22
34.05 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
35.0 Gather patient history and all relevant data in preparation for a complete eye exam--The students will be able to:		
35.01 Record personal information and the patient's chief complaint.		
35.02 Record the patient's medical and ocular history.		
35.03 Record the family's medical and ocular history using proper medical abbreviations.		
35.04 Identify preexisting conditions and medications affecting the eye.		SC.912.L.14.6 SC.912.L.14.39

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.L.14.50 SC.912.L.14.52
35.05 Elicit information with respect to current pertinence for examination.		
36.0 Prepare patients for and assist in testing for eye disorders--The students will be able to:		
36.01 Accurately take and record patient blood pressure, pulse, height and weight.	MAFS.912.N-Q.1.3	SC.912.N.1.1
36.02 Accurately screen and record patient visual acuity.	MAFS.912.N-Q.1.3	SC.912.N.1.1
36.03 Accurately evaluate and record.		SC.912.N.1.1
36.3.01 Dominant eye and hand		SC.912.N.1.1
36.3.02 Cover test for muscular imbalance		SC.912.N.1.1
36.3.03 Saccadic for erratic eye movements		SC.912.N.1.1
36.3.04 Near point of convergence		SC.912.N.1.1
36.3.05 Pursuits, rotations and versions		SC.912.N.1.1
36.04 Demonstrate knowledge of selected instruments used in determining specific eye disorders.		
37.0 Perform medical administrative office tasks--The students will be able to:		
37.01 Schedule and confirm appointments.		
37.02 Process all types of incoming and outgoing correspondence.	LAFS.1112.SL.2.6 LAFS.1112.L.1.1 LAFS.1112.L.1.2	
37.03 Organize office procedures from a management perspective.		
37.3.01 Verification of insurance benefits		
37.3.02 Medical records management.		
37.3.03 Insurance claims procedures		
37.04 Perform filing using a variety of methods.		
37.05 Implement appropriate joint commission patient safety goals.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
37.06 Manage frame boards.		
38.0 Recognize patient needs in relation to lens characteristics--The students will be able to:		
38.01 Interpret the various symbols and abbreviations in a written eyeglass and contact lens prescription.		SC.912.N.1.1
38.02 Distinguish lens criteria for myopic, hyperopic, astigmatic and presbyopic correction.	LAFS.1112.L.3.6	SC.912.P.10.22
38.03 Identify the different designs of multifocal lenses to fit the patient's needs.		SC.912.P.10.22
38.04 Calculate focal lengths from dipotric values.		SC.912.P.10.22
38.05 Measure vertex distance and compensate for contact lens use.	MAFS.912.N-Q.1.3	
38.06 Accurately measure a patient's needs with the use of a phoropter.		SC.912.N.1.1
38.07 Define prism imbalance, vertical imbalance and full imbalance.	LAFS.1112.L.3.6	SC.912.P.10.18
38.08 Identify the effects of optical prism on lenses.	LAFS.1112.SL.1.1	SC.912.P.10.18 SC.912.P.10.22
38.09 Describe the effects of types of tint on the eye.	LAFS.1112.SL.1.1	SC.912.P.10.18
38.010 Estimate the best transmission value related to light.		SC.912.P.10.18
39.0 Demonstrate knowledge of frame selection techniques used in a dispensing office setting--The students will be able to:		
39.01 Distinguish between square, round, rectangular, oblong and oval features.	LAFS.1112.RI.3.9	
39.02 Compare features with large, long and small nasal attributes.	LAFS.1112.RI.3.9	
39.03 Contrast hair and skin tone.	LAFS.1112.RI.3.9	
39.04 Select a frame such that the horizontal and vertical fit the patient's needs.		
39.05 Select a frame such that the material and color fit the patient's needs.		
39.06 Select a frame considering lens thickness and material.		
39.07 Select a frame considering temple length.		
39.08 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.

Florida Standards	Correlation to CTE Program Standard #
30.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Vision Care Assisting.	
30.01 Key Ideas and Details	
30.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
30.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
30.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
30.02 Craft and Structure	
30.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
30.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
30.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.1112.RST.2.6	
30.03 Integration of Knowledge and Ideas	
30.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
LAFS.1112.RST.3.7	
30.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
LAFS.1112.RST.3.8	
30.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
LAFS.1112.RST.3.9	
30.04 Range of Reading and Level of Text Complexity	
30.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
30.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
LAFS.1112.RST.4.10	
31.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Vision Care Assisting.	
31.01 Text Types and Purposes	
31.01.1 Write arguments focused on discipline-specific content.	
LAFS.1112.WHST.1.1	
31.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
LAFS.1112.WHST.1.2	
31.02 Production and Distribution of Writing	
31.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
LAFS.1112.WHST.2.4	
31.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
LAFS.1112.WHST.2.5	

	31.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
31.03	Research to Build and Present Knowledge	
	31.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
	31.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
	31.03.3	Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
31.04	Range of Writing	
	31.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Vision Care Assisting.	
32.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
32.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
32.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
32.04	Model with mathematics. MAFS.K12.MP.4.1	
32.05	Use appropriate tools strategically. MAFS.K12.MP.5.1	
32.06	Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
32.07 Look for and make use of structure. MAFS.K12.MP.7.1	
32.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
40.0 Demonstrate knowledge of frame adjustment and alignment--The students will be able to:		
40.01 Identify frame parts and materials.		
40.02 Demonstrate knowledge of frame measurement.	MAFS.912.N-Q.1.3	
40.03 Demonstrate pupillary distance measurement.	MAFS.912.N-Q.1.3	
40.04 Demonstrate frame selection considering customer and frame characteristics.		
40.05 Select correct frame and bridge size.		SC.912.N.1.1
40.06 Verify prescription information.		SC.912.N.1.1
40.07 Perform frame adjustment and alignment.		
40.08 Perform frame repairs.		
40.09 Identify occupational eyewear and special purpose frames.		SC.912.N.1.1
41.0 Demonstrate and perform basic skills relating to lenses--The students will be able to:		
41.01 Use a manual lensometer.	MAFS.912.N-Q.1.3	
41.02 Find the optical center of a sphere and a spherocylindrical lens in a manual lensometer.		
41.03 Convert a lens according to the principals of toric transposition.	MAFS.912.N-Q.1.3	
41.04 Duplicate a pair of prescription eyeglasses.		
41.05 Calculate lens size.	MAFS.912.N-Q.1.3 MAFS.912.A-SSE.1.1	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	41.06 Calculate decentration.	MAFS.912.N-Q.1.3 MAFS.912.A-SSE.1.1	
	41.07 Perform special mountings-drill and groove procedures.		
	41.08 Demonstrate knowledge of lens tinting.		
	41.09 Check finished product against ANSI standards.		
42.0	Edge, tint and inspect a pair of glass or plastic lenses and insert into a frame–The students will be able to:		
	42.01 Spot the optical center on any given axis in a pair of single vision, bifocal, or progressive lenses.		
	42.02 Decenter and block any given lens avoiding unwanted prism.	MAFS.912.N-Q.1.3	
	42.03 Edge any single vision or multifocal lens to mount in a plastic, metal, semi-rimless and rimless frame.		
	42.04 Apply a safety bevel.		
	42.05 Tint and coat various lenses.		
	42.06 Insert lens into a frame.		
	42.07 Inspect completed spectacles to meet ANSI Standards.		
43.0	Dispense optical supplies--The students will be able to:		
	43.01 Select frames according to prescription suitability, color, style and size.		
	43.02 Fill out Rx card completely and correctly.		
	43.03 Take proper patient measurements.	MAFS.912.N-Q.1.3	SC.912.N.1.1
	43.04 Dispense eyewear.		
	43.05 Adjust frames to patient's face using standard alignment.		
	43.06 Manage frame-boards.		
	43.07 Dispense contact lenses.		
	43.08 Describe types and care systems for contact lenses.	LAFS.1112.SL.2.6	
	43.09 Demonstrate insertion and removal techniques of contact lenses.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
43.010 Use keratometer.	MAFS.912.N-Q.1.3	
43.011 Demonstrate knowledge of frame repair.		

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

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

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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Health Unit Coordinator (Secondary)
Program Type: Career Preparatory
Career Cluster: Health Science

	Secondary – Career Preparatory	
Program Number	8417280	
CIP Number	0351070301	
Grade Level	9-12, 30, 31	
Standard Length	4 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *([See DOE approved list](#))
	Health Unit Coordinator 1 and 2	REG NURSE 7 G MED RECTEC 7G PRAC NURSE @7 %7%G *(Must be a Registered Nurse) TEC MED !7 G
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 43-6013 Medical Secretaries	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
    8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8417281	Health Unit Coordinator 1	1 credit	43-6013	2	VO
	8417282	Health Unit Coordinator 2	1 credit	43-6013	2	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices

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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Health Unit Coordinator.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Health Unit Coordinator.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Health Unit Coordinator.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-45 encompass Health Unit Coordinator:

31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Health Unit Coordinator.

32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Health Unit Coordinator.

33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Health Unit Coordinator.

34.0 Use oral and written communication skills in creating, expressing and interpreting information and ideas.

35.0 Describe the importance of professional ethics and legal responsibilities for the Health Unit Coordinator.

36.0 Interpret and apply medical terminology specific to health unit clerks.

37.0 Organize and maintain efficient work practices.

38.0 Perform clerical duties.

39.0 Perform patient admission, transfer and discharge procedures.

40.0 Prepare discharge/transfer chart for medical records/new unit.

41.0 Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.

42.0 Read, interpret, process, coordinate and transcribe physicians' orders.

43.0 Demonstrate an understanding of the Health Unit Coordinators role in the Nutritional Care Department.

44.0 Demonstrate an understanding of the Health Unit Coordinators role in processing diagnostic orders.

45.0 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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

**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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Health Unit Coordinator.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. LAFS.1112.RST.2.6	

Florida Standards	Correlation to CTE Program Standard #
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Health Unit Coordinator.	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	
32.02.3 Use technology, including the Internet, to produce, publish, and update	

Florida Standards	Correlation to CTE Program Standard #
individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Health Unit Coordinator.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	
33.07 Look for and make use of structure.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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 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
34.01 Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques when using the telephone and answering patient call lights.		
34.02 Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.		
34.03 Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.		
34.04 Apply active listening skills to obtain and clarify information.		
34.05 Exhibit public relations skills that aid in achieving customer satisfaction including face to face interactions.		
34.06 Explain why implementation of the electronic medical record is requiring advanced communication skills for the health unit coordinator (HUC).		
34.07 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.		
34.08 Define and explain the importance of culturally sensitive care in the health care setting.		
34.09 List five guidelines to follow that could improve intercultural communication.		
35.0 Describe the importance of professional ethics and legal responsibilities for the Health Unit Coordinator. –The student will be able to:		
35.01 List seven patient rights as outlined in HIPAA.		
35.02 Identify seven patient identifiers (individually identifiable health information [IIHI]).		

	35.03	Explain two purposes of the Health Information Technology for Economic and Clinical Health (HITECH) Act.		
	35.04	Explain the responsibilities the health unit coordinator (HUC) has for HIPAA compliance.		
	35.05	Evaluate alternative responses to workplace situations based on personal, professional, ethical, legal responsibilities, and employer policies.		
36.0	Interpret and apply medical terminology specific to health unit clerks. – The student will be able to:			
	36.01	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	
	36.02	Spell, pronounce and define medical terms, as related to Health Unit Coordinator.	LAFS.910.L.3.4c,d LAFS.1112.L.3.4c,d	
	36.03	Relate medical terminology to the body systems.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
	36.04	Identify and define standard abbreviations and medical symbols.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
	36.05	Identify apothecary and metric systems.	MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
37.0	Organize and maintain efficient work practices. --The student will be able to:			
	37.01	Arrange daily activities by priority.		
	37.02	Prepare and post unit information lists.	LAFS.910.W.4.10 LAFS.1112.W.4.10	
	37.03	Maintain a supply of assembled medical/surgical admission packets.		
	37.04	Distribute forms and articles from in-basket.		
	37.05	Identify, store and maintain unit equipment/supplies in a neat and orderly manner.		
	37.06	Sanitize nursing station equipment.		
	37.07	Maintain par levels of supplies as required by the nursing unit		
	37.08	Greet all visitors to the nursing unit and offer assistance as necessary.		
38.0	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
	38.01	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	
	38.02	Prepare, label and add forms to chart.		
	38.03	Record admission data on unit records.	LAFS.910.L.1.2 LAFS.1112.L.1.2 MAFS.912.N-Q.1.1	
	38.04	Obtain previous admission records/X-rays.		
	38.05	Post all reports on charts.		
	38.06	File and retrieve assorted forms.		
	38.07	Maintain patient tracking for patients leaving the unit (electronic or paper log).		
39.0	Perform patient admission, transfer and discharge procedures.			
	39.01	List four types of admissions and three types of patients.		
	39.02	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.		
	39.03	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.		
	39.04	List the components that may be included in a set of pre/postoperative orders.		
	39.05	Explain why it is important for the HUC to monitor the patient's electronic medical record (EMR) consistently.		
	39.06	Explain the purpose and the benefits of the electronic patient status tracking board for the patient's family and/or friends.		
	39.07	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.		

40.0	**Prepare discharge/transfer chart for medical records/new unit.**			
	40.01	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.		
	40.02	List the tasks that may be required to complete a routine discharge.		
	40.03	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).		
	40.04	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.		
	40.05	List the tasks that are performed when a patient is transferred from one unit to another.		
	40.06	List the tasks performed by the HUC when a patient is transferred from one room to another room on the same unit.		
	40.07	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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Health Unit Coordinator.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.RST.2.6	
	31.03	Integration of Knowledge and Ideas	
	31.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
		LAFS.1112.RST.3.7	
	31.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
		LAFS.1112.RST.3.8	
	31.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
		LAFS.1112.RST.3.9	
	31.04	Range of Reading and Level of Text Complexity	
	31.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	31.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
		LAFS.1112.RST.4.10	
32.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Health Unit Coordinator.		
	32.01	Text Types and Purposes	
	32.01.1	Write arguments focused on discipline-specific content.	
		LAFS.1112.WHST.1.1	
	32.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
		LAFS.1112.WHST.1.2	
	32.02	Production and Distribution of Writing	
	32.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
		LAFS.1112.WHST.2.4	
	32.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
		LAFS.1112.WHST.2.5	

Florida Standards	Correlation to CTE Program Standard #
32.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Health Unit Coordinator.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
33.07 Look for and make use of structure. MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
41.0 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:		
41.01 Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.		
41.02 Participate in emergency or disaster plan, CPR and first aid.		
41.03 Identify the location of emergency equipment on the nursing unit.		
41.04 Recognize and follow all appropriate emergent code protocols.		
41.05 Comply with regulatory agency guidelines.		
42.0 Read, interpret, process, coordinate and transcribe physicians' orders. – The student will be able to:		
42.01 Identify all types of physician's orders.	LAFS.910.RI.2.4 LAFS.1112.RI.2.4	
42.02 Prioritize orders for transcription.	LAFS.910.W.2.6 LAFS.910.L.3.6 LAFS.1112.W.2. LAFS.1112.L.3.6	
42.03 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	
42.04 Arrange for ordered consultations.	LAFS.910.SL.2.6 LAFS.1112.SL.2.6	

	42.05	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	
	42.06	List the points of information that should be communicated to the consulting physician's office when a consultation order is transcribed.		
43.0	Demonstrate an understanding of the Health Unit Coordinators role in the Nutritional Care Department. – The student will be able to:			
	43.01	Explain the importance of communicating diet changes and patient food allergies to the nutritional care department.		
	43.02	List the groups of diets including nutritional supplements that may be ordered for the hospitalized patient.		
	43.03	List consistency changes that can be made to a standard diet and explain what is included in each.		
	43.04	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.		
	43.05	Identify therapeutic diets that the patient's doctor may order.		
	43.06	Identify diets that may be requested by patients and assist them in ordering appropriate meals.		
	43.07	List the items an HUC may need to order when transcribing an order for tube feeding.		
	43.08	Explain the purpose of the doctors' orders force fluids, limit fluids, and calorie count and 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.		
	43.09	Discuss the importance of sending total parenteral nutrition (TPN) orders to the pharmacy in a timely manner.		
44.0	Demonstrate an understanding of the Health Unit Coordinators role in processing diagnostic orders. – The student will be able to:			
	44.01	List the major divisions of the clinical laboratory and their functions.		
	44.02	List six invasive procedures that would require a consent form signed by the patient.		
	44.03	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.		
	44.04 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.		
	44.05 List the information regarding the patient that the health unit coordinator must include when ordering procedures to be performed by the diagnostic imaging department.		
	44.06 Explain when a patient would be required to sign an informed consent before a diagnostic imaging procedure.		
	44.07 Discuss sequencing or scheduling of multiple diagnostic imaging procedures ordered for the same patient.		
	44.08 Demonstrate an understanding of other diagnostic studies.		
45.0	Explain the importance of employability skills and entrepreneurship skills for the Health Unit Coordinator. – The student will be able to:		
	45.01 Discuss benefits and responsibilities of the HUC for membership in a professional organization such as the National Association of Health Unit Coordinators.		
	45.02 Determine how to apply for membership in a professional organization.		
	45.03 List five benefits of becoming a certified HUC.		
	45.04 Complete application for certification.		
	45.05 List three positions in which the HUC may be cross-trained.		
	45.06 Conduct a job search for HUC positions and complete a job application form correctly.		
	45.07 Compose written communication including emails using correct spelling, grammar, formatting and confidentiality.		
	45.08 Observe professional e-mail practices and etiquette.		

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

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

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 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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Practical Nursing (Secondary)**
Program Type: **Career Preparatory**
Career Cluster: **Health Science**

Secondary – Career Preparatory	
Program Number	8418300
CIP Number	0351390100
Grade Level	9-12, 30, 31
Standard Length	9 credits
Teacher Certification	REG NURSE 7 G PRAC NURSE @7 %7%G *(Must be a Registered Nurse)
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2061 Licensed Practical and Licensed Vocational Nurses 31-1014 Nursing Assistants 31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

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

This program is designed to prepare students for employment as licensed practical nurses (SOC 29-2061). The program must be approved by the Florida State Board of Nursing so the graduate may apply to take the examination to practice as a Licensed Practical

Nurse. The program must also be approved by the BON as a nursing assistant program in order for students to apply to take the C.N.A. exam at the end of OCP B as a program completer.

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 three occupational completion points.
The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A & B	8418310	Practical Nursing 1	1 credit	31-9099 31-1014	3	VO
	8418320	Practical Nursing 2	1 credit	29-2061	3	VO
	8418330	Practical Nursing 3	1 credit	29-2061	3	VO
	8418340	Practical Nursing 4	1 credit	29-2061	3	VO
	8418350	Practical Nursing 5	1 credit	29-2061	3	VO
	8418360	Practical Nursing 6	1 credit	29-2061	3	VO
	8418370	Practical Nursing 7	1 credit	29-2061	3	VO
	8418380	Practical Nursing 8	1 credit	29-2061	3	VO
C	8418390	Practical Nursing 9	1 credit	29-2061	3	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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 <u>that have been aligned</u> 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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

Regulated Programs

Please refer to Florida Statute 464.019 (1) (b) for faculty credential requirements to teach this program.

Students are eligible to apply to take the national licensing examination after satisfactory completion of an approved program. Licensure Examination for Practical Nurses, CAT NCLEX-PN is a computer-administered examination that the nursing graduate must take and pass in order to practice as a Licensed Practical Nurse.

Clinical instruction of nursing students will meet the requirements of Florida Statute 464.019. Clinical experience must make up or least 50% of the total program. Simulated practice and clinical experiences are included as an integral part of this program. <u>Clinical Simulation may be used for no more than 50% of the total clinical experience.</u>

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   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Practical Nursing.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Practical Nursing.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Practical Nursing.
04.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
05.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
06.0   Demonstrate legal and ethical responsibilities.
07.0   Demonstrate an understanding of and apply wellness and disease concepts.
08.0   Recognize and practice safety and security procedures.
09.0   Recognize and respond to emergency situations.
10.0   Recognize and practice infection control procedures.
11.0   Demonstrate an understanding of information technology applications in healthcare.
12.0   Demonstrate employability skills.
13.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
14.0   Apply basic math and science skills.
15.0   Use verbal and written communications specific to nursing assistant
16.0   Demonstrate legal and ethical responsibilities specific to nursing assistant
17.0   Perform physical comfort and safety functions specific to nursing assistant
18.0   Provide personal patient care
19.0   Perform patient care procedures
20.0   Apply principles of nutrition
21.0   Provide care for geriatric patients
22.0   Apply the principles of infection control specific to nursing assistant
23.0   Provide biological, psychological, and social support
24.0   Develop supervised organizational skills, following the patient plan of care
25.0   Assist with restorative (rehabilitative) activities
26.0   Describe the anatomy and physiology of the human body
27.0   Describe human growth and development
28.0   Apply principles of nutrition

29.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Practical Nursing.
30.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Practical Nursing.
31.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Practical Nursing.
32.0   Demonstrate computer literacy as related to nursing functions
33.0   Use appropriate verbal and written communications in the performance of nursing functions
34.0   Demonstrate legal and ethical responsibilities specific to the nursing profession
35.0   Apply the principles of infection control, utilizing nursing principles
36.0   Perform aseptic techniques
37.0   Perform nursing procedures
38.0   Administer medication
39.0   Provide care for pre-operative and post-operative patients, utilizing nursing principles
40.0   Provide bio-psycho-social support
41.0   Develop transitional skills
42.0   Provide care for medical/surgical/oncology patients, utilizing nursing principles
43.0   Provide care for maternal/newborn patients, utilizing nursing principles
44.0   Provide care for pediatric patients, utilizing nursing principles to
45.0   Demonstrate employability skills specific to practical nursing

Florida Department of Education
Student Performance Standards

Course Title: Practical Nursing 1
Course Number: 8418310
Course Credit: 1

Course Description:

This course covers the Core and the competencies for OCP A and B (Articulated Nursing Assistant) with the addition of 15 clinical hours. It includes basic communication skills; math and science, employability skills, safety practices, legal and ethical responsibilities, knowledge of the health care system as a whole, principles of infection control, first aid, and basic patient care competencies.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Practical Nursing.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical	

Florida Standards			Correlation to CTE Program Standard #
		context relevant to grades 9–10 texts and topics. LAFS.910.RST.2.4	
	01.02.2	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). LAFS.910.RST.2.5	
	01.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. LAFS.910.RST.2.6	
01.03	Integration of Knowledge and Ideas		
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. LAFS.910.RST.3.7	
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. LAFS.910.RST.3.8	
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. LAFS.910.RST.3.9	
01.04	Range of Reading and Level of Text Complexity		
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently. LAFS.910.RST.4.10	
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Practical Nursing.		

Florida Standards	Correlation to CTE Program Standard #
02.01 Text Types and Purposes	
02.01.1 Write arguments focused on discipline-specific content. LAFS.910.WHST.1.1	
02.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.910.WHST.1.2	
02.02 Production and Distribution of Writing	
02.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.910.WHST.2.4	
02.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.910.WHST.2.5	
02.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. LAFS.910.WHST.2.6	
02.03 Research to Build and Present Knowledge	
02.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.910.WHST.3.7	
02.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. LAFS.910.WHST.3.8	
02.03.3 Draw evidence from informational texts to support analysis, reflection, and research.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.910.WHST.3.9	
	02.04	Range of Writing	
	02.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.910.WHST.4.10	
03.0	Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Practical Nursing.		
	03.01	Make sense of problems and persevere in solving them.	
		MAFS.K12.MP.1.1	
	03.02	Reason abstractly and quantitatively.	
		MAFS.K12.MP.2.1	
	03.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	03.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	03.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	03.06	Attend to precision.	
		MAFS.K12.MP.6.1	
	03.07	Look for and make use of structure.	
		MAFS.K12.MP.7.1	
	03.08	Look for and express regularity in repeated reasoning.	
		MAFS.K12.MP.8.1	

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
04.0 Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:		SC.912.L.16.10
04.01 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	
04.02 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	
04.03 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	
04.04 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	
04.05 Identify the general roles and responsibilities of the individual members of the healthcare team.	LAFS.910.W.1.2 LAFS.910.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.3.7 LAFS.1112.W.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.1	
04.06 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	
04.07 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	
04.08 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	
04.09 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	
04.10 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 LAFS.1112.RI.1.3	
04.11 Demonstrate effective techniques for managing team conflict.	LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	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	
04.12 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	
04.13 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	
05.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:		SC.912.N.1.1
05.01 Develop basic speaking and active listening skills.	LAFS.910.SL.1.1 LAFS.910.SL2.4 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	
05.02 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 LAFS.910.W.2.4 LAFS.910.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.910.SL.2.6 LAFS.1112.SL.1.1 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	
05.03 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	
05.04 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	
05.05 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	
05.06 Use appropriate medical terminology and abbreviations.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
05.07 Recognize the importance of courtesy and respect for patients and other healthcare workers and maintain good interpersonal relationships.	LAFS1112.SL.1.1 LAFS.1112.SL.1.3 LAFS.1112.L.1.1	
05.08 Recognize the importance of patient/client educations regarding healthcare.	LAFS.1112.L.1.1 LAFS.1112.SL1.1 LAFS.1112.SL.1.3	
05.09 Adapt communication skills to varied levels of understanding and cultural	LAFS.910.SL.2.6	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
orientation including diverse age, cultural, economic, ethnic and religious groups.	LAFS.1112.SL.2.6 LAFS.1112.W.2.5	
05.10 Analyze elements of communication using a sender-receiver model.	LAFS.910.SL.1.1d LAFS.1112.SL.1.1d LAFS.1112.W.2.5 LAFS.1112.RI.1.1	
05.11 Distinguish between and report subjective and objective information.	LAFS.1112.RI.1.1 LAFS.1112.SL.1.1d LAFS.1112.SL.2.4	
05.12 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	
06.0 Demonstrate legal and ethical responsibilities. – The student will be able to:		SC.912.L.16.10 SC.912.N.1.1
06.01 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	
06.02 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	
06.03 Demonstrate procedures for accurate documentation and record keeping.	LAFS.1112.W.2.6	
06.04 Interpret healthcare facility policy and procedures.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2 LAFS.1112.RI.3.8	
06.05 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.1.1a LAFS.1112.SL.2.4	
06.06 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	
06.07 Describe advance directives.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.11112.RI.1.1 LAFS.1112.L.3.6	
06.08 Describe informed consent.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.1112.RI.1.1 LAFS.1112.L.3.6	
06.09 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	
06.10 Differentiate between legal and ethical issues in healthcare.	LAFS.910.RI.3.8 LAFS.1112.SL.1.2 LAFS.1112.RI.3.8	
06.11 Describe a code of ethics consistent with the healthcare occupation.	LAFS.910.W.1.2d LAFS1112.RI.1.2 LAFS.1112.W.1.2d	
06.12 Identify and compare personal, professional, and organizational ethics.	LAFS.1112.RI.1.3	
06.13 Recognize the limits of authority and responsibility of health care workers including legislated scope of practice	LAFS.1112.RI.1.1	
06.14 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	
06.15 Recognize and report abuse including domestic violence and neglect.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
06.16 Distinguish among the five schedules of controlled substances.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
07.0 Demonstrate an understanding of and apply wellness and disease concepts. – The student will be able to:		SC.912.L.14.46, 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
07.01 Describe strategies for prevention of diseases including health screenings and examinations.	LAFS.910.W.1.3 LAFS.910.SL.2.4 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	
07.02 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	
07.03 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	
07.04 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
07.05 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	
07.06 Explain the basic concepts of positive self image, wellness and stress.	LAFS1112.SL.1.1c	
07.07 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	
07.08 Explore and utilize the U.S. Department of Agriculture's MyPlate food guide (www.choosemyplate.gov).	LAFS.1112.RI.3.8	
07.09 Recognize the steps in the grief process.		
08.0 Recognize and practice safety and security procedures. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.6
08.01 Recognize safe and unsafe working conditions and report safety hazards.	LAFS.1112.W.4.10	
08.02 Demonstrate the safe use of medical equipment.	LAFS.1112.SL.1.1	
08.03 Explain and apply the theory of root- cause analysis	LAFS.1112.SL.2.6	
08.04 Identify and describe methods in medical error reduction and prevention in the various healthcare settings.	LAFS.1112.RI.1.1	
08.05 Identify and practice security procedures for medical supplies and equipment.	LAFS.1112.RI.3.8	
08.06 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	
08.07 Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols and labels.	LAFS.1112.RI.3.7	
08.08 Demonstrate proper body mechanics and ergonomics.	LAFS.1112.SL.2.4	
08.09 Demonstrate the procedure for properly identifying patients.	LAFS.1112.SL.2.4	
08.10 Demonstrate procedures for the safe transport and transfer of patients.	LAFS.1112.SL.2.4	
08.11 Describe fire, safety, disaster and evacuations procedures.	LAFS.1112.L.1.1 LAFS.1112.RI.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
08.12 Discuss The Joint commission patient safety goals (www.jointcommission.org)	LAFS.1112.RI.3.7	
09.0 Recognize and respond to emergency situations. – The student will be able to:		SC.912.N.1.1
09.01 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	
09.02 Describe legal parameters relating to the administration of emergency care.	LAFS.1112.L.1.1 LAFS.1112.RI.3.8	
09.03 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	
09.04 Recognize adverse drug related emergencies and take appropriate first aid action.		
10.0 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
10.01 Define principles of infection control including standard and transmission based precautions.	LAFS.1112.L.3.4a,c	
10.02 Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.	LAFS.1112L.3.4d LAFS.1112.SL.2.4	
10.03 Demonstrate knowledge of surgical asepsis.	LAFS.1112.L.3.4d LAFS.1112.SL.2.4	
10.04 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	
11.0 Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:		SC.912.N.1.1
11.01 Describe technology applications in healthcare.	LAFS.1112.SL.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
11.02 Define terms and demonstrate basic computer skills.	LAFS.1112.L.3.6	
11.03 Recognize technology applications in healthcare.		
11.04 Interpret information from electronic medical documents.	LAFS.1112.SL.2.5 MAFS.912.S-IC.2.6	
11.05 Identify methods of communication to access and distribute data such as fax, e-mail and internet.		
12.0 Demonstrate employability skills. – The student will be able to:		
12.01 Identify personal traits or attitudes desirable in a member of the healthcare team.		
12.02 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	
12.03 Identify documents that may be required when applying for a job.		
12.04 Write an appropriate resume.	LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.W.3.8	
12.05 Conduct a job search.	LAFS.1112.W.3.8	
12.06 Complete a job application form correctly.	LAFS.1112.W.2.5 LAFS.1112.W.2.6	
12.07 Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.	LAFS.1112.W.3.9b	
12.08 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.	LAFS.1112.W.3.9b	
12.09 Identify acceptable work habits.		
12.10 Recognize appropriate affective/professional behavior.		
12.11 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
13.0 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
13.01 Recognize emerging diseases and disorders	MAFS.912.S-IC.1.1 MAFS.912.S-ID.2.5 MAFS.912.S-ID.3.9	
13.02 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	
13.03 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.	LAFS.1112.W.3.7	
13.04 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	
13.05 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	
13.06 Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.	LAFS.1112.RI.3.8	
14.0 Apply basic math and science skills. – The student will be able to:		SC.912.N.1.1
14.01 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	
14.02 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	
14.03 Make, use and convert using both traditional and metric units.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
14.04 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
14.05 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	
14.06 Demonstrate ability to evaluate and draw conclusions.	LAFS.1112.W.3.7 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
14.07 Organize and communicate the results obtained by observation and experimentation.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
14.08 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	
14.09 Calculate ratios.		

Module: Articulated Nursing Assistant

The following intended outcomes 23-33 should be taught together as a module to achieve the occupational completion point of Articulated Nursing Assistant. The average achieving student should be able to complete the module in 75 clock hours. The entire Articulated Nursing Assistant program including the core is 165 hours for the average achieving student but cannot be less than 120 hours.

Successful completion of the occupational completion point of Articulated Nursing Assistant qualifies the student to take the state certification examination for Nursing Assistant if the program has been approved. To be approved the program must be taught by a registered nurse and must have 40 hours of clinical, twenty of which are in a licensed nursing home, and be at least 120 hours in length. This secondary 150 hour course contains 25 hours of clinical and requires 15 more to reach the OCP. Nursing Assistant certification is required for employment in a nursing home, in accordance with Chapter 82-163, Florida Statutes.

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
15.0 Use verbal and written communications specific to nursing assistant–The student will be able to:		
15.01 Obtain specified data from patient and family.	LAFS.910.SL.1.1c LAFS.910.RI.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.1.1A,C LAFS.1112.RI.3.7	
15.02 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	
15.03 Demonstrate use of the intercom.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
16.0 Demonstrate legal and ethical responsibilities specific to nursing assistant–The student will be able to:		
16.01 Demonstrate legal and ethical behavior within the role and scope of nursing assistant responsibilities.	LAFS.1112.RI.3.8	
16.02 Describe the purpose of the chain of command (i.e., to resolve patient or employee problems).	LAFS.910.RI.2.4 LAFS.910.SL.2.4 LAFS.1112.W.1.2 LAFS.1112.RI.2.4 LAFS.1112.SL.2.4	
16.03 Follow policies and procedures affecting the health, safety, and well-being of patients.		
16.04 Recognize and report signs of substance abuse.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
16.05 Follow legal guidelines in charting.	LAFS.1112.RI.3.8	
16.06 Exhibit behavior supporting and promoting residents' rights.	LAFS.1112.SL.2.4	
16.07 Discuss Florida certified nursing assistant rules.		
17.0 Perform physical comfort and safety functions specific to nursing assistant–The student will be able to:		
17.01 Maintain patient units and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.02 Maintain service areas on the units including supplies and equipment.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
17.03 Observe, report, and note changes in the patient's behavior, including mental awareness.	LAFS.1112.RI.1.2 LAFS.1112.W.1.2B	
17.04 Adjust bed and siderails.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.05 Lift, hold, and transfer patients including the use of the mechanical lift utilizing good body mechanics.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.06 Turn and position patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.07 Apply protective devices as directed (e.g., vest and belt).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.08 Apply comfort devices as directed (e.g., footboard, overbed cradle, alternating pressure mattress).	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.09 Assist patient to dangle.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.10 Assist patient in ambulation, including the use of crutch, cane, or walker.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.11 Assist patient in using wheelchair.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.12 Assist patient with care and use of prosthetic/orthotic devices.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.13 Administer back rub.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
17.14 Describe emergency procedures utilized in the clinical area(s).	LAFS.910.W.I.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	
17.15 Implement appropriate Joint Commission patient safety goals.	LAFS.1112.SL.2.4	
18.0 Provide personal patient care–The student will be able to:		
18.01 Give bed bath.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
18.02 Assist with shower or tub bath, including the use of specialty tubs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.03 Assist patient with sink, tub, shower, or bed shampoo.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.04 Shave patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.05 Groom patient, including hair, skin, foot, and nail care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.06 Assist with and/or administer oral hygiene including denture care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.07 Assist patient with toileting using a bedpan and urinal.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.08 Assist patient to dress.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.09 Assist patient with meals.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.10 Provide bowel and bladder training.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.11 Give perineal care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
18.12 Empty urinary drainage.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.0 Perform patient care procedures–The student will be able to:		
19.01 Demonstrate ability to accurately measure and record 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	
19.02 Admit patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.03 Assist with transfer patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
19.04 Assist with discharge of patient.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.05 Make unoccupied/occupied bed.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.06 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	
19.07 Assist patient in passive range-of-motion exercises.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.08 Apply anti-embolic hose and sequential compression devices.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.09 Collect, strain, and/or test routine urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.10 Collect timed urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
19.11 Monitor catheter drainage system.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.12 Collect clean-catch (midstream-voided) urine specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.13 Monitor 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	
19.14 Observe, record, and report patient's emesis..	LAFS.1112.SL.1.1D LAFS.1112.L.1.1 MAFS.912.N-Q.1.3	
19.15 Monitor and assist with care of catheters.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
19.16 Assist with ostomy care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.17 Collect stool specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.18 Perform postmortem care.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.19 Maintain patient-belongings list.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.20 Care for patients with nasal, gastrostomy, and/or intravenous tubes.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
19.21 Collect sputum specimen.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
20.0 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
20.01 Identify nutrients and food groups.	LAFS.1112.RI.3.8 LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
20.02 Explain regional, cultural, and religious food preferences.	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	
20.03 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	
20.04 Prepare a basic food plan.	LAFS.1112.RI.3.8 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
20.05 Check patient's diet tray for accuracy.	LAFS.1112.SL.1.2	
20.06 Identify methods of maintaining fluid balance.	LAFS.910.RI.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.RI.1.2	
20.07 Feed a patient		
21.0 Provide care for geriatric patients–The student will be able to:		
21.01 Identify safety principles as related to the elderly.	LAFS.910.RI.1.2 LAFS.1112.RI.1.3 LAFS.1112.RI.1.2	
21.02 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	
21.03 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	
21.04 Distinguish between fact and fallacy about the aging process.	LAFS.1112.W.3.8	
21.05 Identify community resources and services available to the elderly.	LAFS.1112.RI.1.3 LAFS.910.W.3.7 LAFS.910.W.3.8 LAFS.1112.W.2.6 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
21.06 Apply Reality Orientation Techniques and Validation Therapy.	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
21.07 Provide and involve patients in diversional activities.	LAFS.1112.SL.1.1B LAFS.1112.SL.2.5	
21.08 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 LAFS.910.RI.2.4	
21.09 Provide care for patients with special needs (e.g., impaired hearing, impaired vision, immobility, impaired body functions).	LAFS.1112.SL.2.5	
21.10 Recognize and respond appropriately to symptoms of common diseases,	LAFS.1112.RI.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
including dementia, depression/suicide and Alzheimer's.		
21.11 Identify common problems in drug use and abuse in the elderly.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2	
21.12 Identify components of the grief process.		
22.0 Apply the principles of infection control specific to nursing assistant–The student will be able to:		
22.01 Provide care for patients with infectious diseases applying the principles of "Universal (standard) Precautions" utilized with all patients as well as special procedures required.	LAFS.1112.SL.2.5	
22.02 Set up isolation unit.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
22.03 Follow isolation procedure with food tray, garments, and other materials.	LAFS.1112.SL.2.5	
22.04 Collect specimen from patient in isolation.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
23.0 Provide biological, psychological, and social support–The student will be able to:		
23.01 Discuss family roles and their significance to health.	LAFS.910.SL.1.1a LAFS.1112.SL.1.1A,D LAFS.1112.L.1.1	
23.02 Respond to patient and family emotional needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
24.0 Develop supervised organizational skills, following the patient plan of care–The student will be able to:		
24.01 Organize patient-care assignments.	LAFS.1112.W.4.1	
24.02 Complete assignments accurately and in a timely manner.	LAFS.1112.W.4.1 LAFS.1112.L.1.1	
25.0 Assist with restorative (rehabilitative) activities–The student will be able to:		
25.01 List the purposes of restorative (rehabilitation) programs.	LAFS.910.W.1.2e LAFS.910.W.2.4 LAFS.1112.W.1.2e	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.2.4 LAFS.1112.W.2.6	
25.02 Assist patients with specified restorative (rehabilitation) needs.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	
25.03 Assist patients/residents to reach the optimum level of independence.	LAFS.1112.SL.1.1D LAFS.1112.L.1.1	

Florida Department of Education
Student Performance Standards

Course Title: **Practical Nursing 2**
Course Number: **8418320**
Course Credit: **1**

Course Description:

This course is a continuation of Practical Nursing 1. It includes normal body structure and function, human growth and development, and principles of nutrition.

Laboratory and 50 hours of clinical experiences are an integral part of this course.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Practical Nursing.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.910.RST.2.4	
	01.02.2	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).	
		LAFS.910.RST.2.5	
	01.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.	
		LAFS.910.RST.2.6	
	01.03	Integration of Knowledge and Ideas	
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	
		LAFS.910.RST.3.7	
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.	
		LAFS.910.RST.3.8	
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.	
		LAFS.910.RST.3.9	
	01.04	Range of Reading and Level of Text Complexity	
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently.	
		LAFS.910.RST.4.10	
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Practical Nursing.		
	02.01	Text Types and Purposes	
	02.01.1	Write arguments focused on discipline-specific content.	

Florida Standards		Correlation to CTE Program Standard #
	LAFS.910.WHST.1.1	
02.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
	LAFS.910.WHST.1.2	
02.02 Production and Distribution of Writing		
02.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
	LAFS.910.WHST.2.4	
02.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
	LAFS.910.WHST.2.5	
02.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.	
	LAFS.910.WHST.2.6	
02.03 Research to Build and Present Knowledge		
02.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
	LAFS.910.WHST.3.7	
02.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	
	LAFS.910.WHST.3.8	
02.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
	LAFS.910.WHST.3.9	
02.04 Range of Writing		
02.04.1	Write routinely over extended time frames (time for reflection and	

	revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.910.WHST.4.10	
03.0	Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Practical Nursing.	
	03.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
	03.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
	03.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
	03.04 Model with mathematics. MAFS.K12.MP.4.1	
	03.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
	03.06 Attend to precision. MAFS.K12.MP.6.1	
	03.07 Look for and make use of structure. MAFS.K12.MP.7.1	
	03.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
26.0 Describe the anatomy and physiology 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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		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
		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
26.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
26.02 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	
26.03 Describe the structure and function of the cardio-vascular 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	
26.04 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
26.05 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	
26.06 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	
26.07 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 LAFS.1112.W.1.2a,d,e LAFS.1112.W.2.4 LAFS.1112.W.4.10	
26.08 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	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	
26.09 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	
27.0 Describe human growth and development–The student will be able to:		SC.912.L.16.13
27.01 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	
27.02 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.2.4 LAFS.1112.W.4.10	
27.03 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	
27.04 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	
27.05 Discuss family roles and their significance to health.	LAFS.910.SL.1.1a LAFS.910.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.W.3.8	
28.0 Apply principles of nutrition–The student will be able to:		
28.01 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	
28.02 List factors which must be considered when purchasing food.	LAFS.910.W.4.10 LAFS.910.W.1.1c LAFS.910.W.1.2e	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.4.10 LAFS.1112.W.1.1c LAFS.1112.W.1.2e	
28.03 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	
28.04 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 3**
Course Number: **8418330**
Course Credit: **1**

Course Description:

This course includes fundamentals of nursing, introduction to medical surgical nursing, and introduction to Pharmacology. It provides the student with information regarding common acute and chronic medical and surgical conditions including the management, needs and nursing care of patients with these conditions.

Florida Standards			Correlation to CTE Program Standard #
29.0	Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Practical Nursing.		
	29.01	Key Ideas and Details	
	29.01.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
	29.01.2	Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
	29.01.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
	29.02	Craft and Structure	
	29.02.1	Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.RST.2.4	
	29.02.2	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.	
		LAFS.1112.RST.2.5	
	29.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	
		LAFS.1112.RST.2.6	
29.03	Integration of Knowledge and Ideas		
	29.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
		LAFS.1112.RST.3.7	
	29.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
		LAFS.1112.RST.3.8	
	29.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
		LAFS.1112.RST.3.9	
29.04	Range of Reading and Level of Text Complexity		
	29.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	29.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
		LAFS.1112.RST.4.10	
30.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Practical Nursing.		
30.01	Text Types and Purposes		
	30.01.1	Write arguments focused on discipline-specific content.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.1.1	
	30.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
		LAFS.1112.WHST.1.2	
30.02	Production and Distribution of Writing		
	30.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
		LAFS.1112.WHST.2.4	
	30.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
		LAFS.1112.WHST.2.5	
	30.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
30.03	Research to Build and Present Knowledge		
	30.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	30.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	30.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
30.04	Range of Writing		
	30.04.1	Write routinely over extended time frames (time for reflection and	

Florida Standards	Correlation to CTE Program Standard #
revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
31.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Practical Nursing.	
31.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
31.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
31.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
31.04 Model with mathematics. MAFS.K12.MP.4.1	
31.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
31.06 Attend to precision. MAFS.K12.MP.6.1	
31.07 Look for and make use of structure. MAFS.K12.MP.7.1	
31.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
32.0 Demonstrate computer literacy as related to nursing functions–The student will be able to:		
32.01 Demonstrate computational, keyboarding and retrieval skills relevant to job requirements for a Licensed Practical Nurse.		
32.02 Identify computer skills utilized for each clinical rotation and apply, as appropriate.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
33.0 Use appropriate verbal and written communications in the performance of nursing functions--The student will be able to:		SC.912.N.1.1
33.01 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	
33.02 Report and record objective, pertinent observations.	LAFS.910.SL.2.4 LAFS.910.L.3.6 LAFS.1112.SL.2.4 LAFS.1112.L.3.6	
33.03 Maintain current documentation.	LAFS.910.W.4.10 LAFS.1112.W.10	
33.04 Document changes in patient behavior and mental awareness.	LAFS.910.W.4.10 LAFS.1112.W.4.10	
33.05 Obtain specified data from patient and family.	LAFS.910.SL.1.1c LAFS.1112.SL.1.1c	
33.06 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	
33.07 Utilize nursing principles to assist with the patient's plan of care.		
34.0 Demonstrate legal and ethical responsibilities specific to the nursing profession–The student will be able to:		SC.912.L.16.10
34.01 Identify the components of the Nurse Practice Act.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
34.02 Practice within the role and scope of the job description.		
34.03 Follow policies and procedures affecting the health, safety, and well-being of patients.		
34.04 Follow legal guidelines in charting.		
35.0 Apply the principles of infection control, utilizing nursing principles–The student will be able to:		SC.912.L.14.52

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
35.01 Put on and remove personal protective equipment.		
35.02 Collect specimen from isolated patient.		
35.03 Demonstrate procedures for initiating isolation, including care and disposal of equipment and supplies.		
36.0 Perform aseptic techniques–The student will be able to:		SC.912.L.14.52
36.01 Apply principles of medical and surgical asepsis.		
36.02 Apply and remove sterile gloves and gown.		
36.03 Apply sterile dressing.		
36.04 Open sterile equipment and supplies.		
36.05 Maintain sterile field.		
36.06 Clean and disinfect equipment.		
37.0 Perform nursing procedures–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
37.01 Assist the RN with patient assessments.		
37.02 Apply hot and cold applications.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
37.03 Assist patient with sitz bath.		
37.04 Apply pelvic belt for traction.		
37.05 Apply cervical collar.		
37.06 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	
37.07 Monitor patient's following special procedures (e.g. I.V.P., myelogram, MRI, CAT scan).		
37.08 Apply bandage.		
37.09 Apply binders.		
37.10 Apply brace.		
37.11 Apply splints.		
37.12 Care for patient in skin and skeletal traction.		
37.13 Clean tong/pin site.		
37.14 Change clean dressing.		
37.15 Insert urinary catheter.		
37.16 Obtain specimen from patient with indwelling catheter.		
37.17 Measure urine specific gravity.		
37.18 Remove retention catheter.		
37.19 Change ostomy appliance.		
37.20 Connect nasogastric tube to suction machine.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
37.21 Remove nasogastric tube.		
37.22 Administer gavage feeding.		
37.23 Perform neurological checks.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
37.24 Give enema.		
37.25 Logroll patient.		
37.26 Test stool for occult blood.		
37.27 Perform naso-oral-pharyngeal suction.		
37.28 Perform tracheostomy care.		
37.29 Irrigate urinary catheter.		
37.30 Maintain continuous urinary bladder irrigation.		
37.31 Irrigate ear.		
37.32 Irrigate eye.		
37.33 Irrigate nasogastric tube.		
37.34 Irrigate vaginal canal.		
37.35 Irrigate wound.		
37.36 Irrigate oral cavity.		
37.37 Irrigate colostomy.		
37.38 Maintain enteral feeding tubes.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
37.39 Instruct patient in breathing exercises.		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	37.40 Obtain and test a drop of blood for glucose monitoring.		
	37.41 Assist with physical examination.		
	37.42 Assist patient with diagnostic procedures.		
	37.43 Set up vaporizer/humidifier.		
	37.44 Administer and maintain oxygen.		
	37.45 Perform calculation and adjust IV flow rate.	MAFS.912.A.REI.2.3 MAFS.912.A-SSE.1.1	
	37.46 Observe intravenous infusion and report signs of adverse reactions.		
	37.47 Inspect insertion site, change dressing, and remove IV needle or catheter from peripheral veins.		
	37.48 Hang bags or bottles of hydrating fluid.		
	37.49 Provide postmortem care.		
38.0	Administer medication–The student will be able to:		SC.912.L.14.20 SC.912.L.14.50 SC.912.L.14.51
	38.01 Demonstrate accurate dosage calculation.	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	
	38.02 Demonstrate the six rights of administering medication.		
	38.03 Observe and respond to patient's need for medication.		
	38.04 Administer topical medication.		
	38.05 Administer inhalants.		
	38.06 Administer oral medication.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
38.07 Administer sublingual medication.		
38.08 Administer rectal medication.		
38.09 Administer vaginal medication.		
38.10 Administer eye medications.		
38.11 Administer ear drops.		
38.12 Administer nose drops.		
38.13 Administer intramuscular injection (including Z-tract).		
38.14 Administer intradermal injection.		
38.15 Administer subcutaneous injection.		
38.16 Properly obtain, monitor and document use of controlled substances.		
38.17 Instill bladder medication.		
38.18 Care for equipment and supplies used to administer medications.		
38.19 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.		
38.20 Observe and communicate effects of medications.	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	
38.21 Document administration of medication and patient's response on medical record.	LAFS.910.W.1.2d LAFS.1112.W.1.2d	
38.22 Store medications properly.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
38.23 Demonstrate use of medication resources.		
39.0 Provide care for pre-operative and post-operative patients, utilizing nursing principles–The student will be able to:		
39.01 Provide pre-operative and post-operative teaching.	LAFS.910.SL.2.4 LAFS.910.SL1.1a LAFS.1112.SL.2.4 LAFS.1112.SL.1.1a	
39.02 Perform a surgical prep.		
39.03 Prepare patient for operating room.		
39.04 Prepare patient's medical records for operating room.		
39.05 Provide post-operative care.		
39.06 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	
40.0 Provide bio-psycho-social support--The student will be able to:		
40.01 Respond to emotional needs of patient and family.		
40.02 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	
40.03 Differentiate between mental health and mental illness.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
40.04 Recognize signs and symptoms of the various mental health disorders.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
40.05 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
40.06 Recognize the potential for suicide attempts in the depressed person and initiate appropriate intervention.	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	
40.07 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	
40.08 Describe drug seeking behaviors.	LAFS.910.RI.1.2 LAFS.910.RI.2.4 LAFS.1112.RI.1.2 LAFS.1112.RI.2.4	
40.09 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	
40.10 Describe the enabling personality in mental health and addictive treatment.	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	
40.11 Correlate Maslow's Hierarchy with both physical and mental components of health.		
41.0 Develop transitional skills--The student will be able to:		
41.01 Organize complex patient care assignments with multiple clients.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
41.02 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	
41.03 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	
41.04 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	
41.05 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	
41.06 Demonstrate an understanding of licensure by examination and by endorsement.		
41.07 Complete application for licensure by examination.		
41.08 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
41.09 Determine how to apply for membership in a professional organization.	LAFS.910.W.2.6 LAFS.1112.W.2.6	
41.10 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	

Florida Department of Education
Student Performance Standards

Course Title: **Practical Nursing 4**
Course Number: **8418340**
Course Credit: **1**

Course Description:

This course is a continuation of Practical Nursing 3 and may be concurrent with Practical Nursing 3. 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 1.

Florida Standards	Correlation to CTE Program Standard #
29.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Practical Nursing.	
29.01 Key Ideas and Details	
29.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
29.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
29.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	

Florida Standards	Correlation to CTE Program Standard #
29.02 Craft and Structure	
29.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
29.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
29.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. LAFS.1112.RST.2.6	
29.03 Integration of Knowledge and Ideas	
29.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
29.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
29.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
29.04 Range of Reading and Level of Text Complexity	
29.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. 29.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	

Florida Standards	Correlation to CTE Program Standard #
30.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Practical Nursing.	
30.01 Text Types and Purposes	
30.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
30.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
30.02 Production and Distribution of Writing	
30.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
30.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	
30.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
30.03 Research to Build and Present Knowledge	
30.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
30.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
30.03.3 Draw evidence from informational texts to support analysis, reflection,	

Florida Standards	Correlation to CTE Program Standard #
and research. LAFS.1112.WHST.3.9	
30.04 Range of Writing	
30.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
31.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Practical Nursing.	
31.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
31.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
31.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
31.04 Model with mathematics. MAFS.K12.MP.4.1	
31.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
31.06 Attend to precision. MAFS.K12.MP.6.1	
31.07 Look for and make use of structure. MAFS.K12.MP.7.1	
31.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

Florida Department of Education
Student Performance Standards

Course Title: **Practical Nursing 5**
Course Number: **8418350**
Course Credit: 1

Course Description:

This course provides information regarding signs and symptoms, diagnostic tests, and treatment and care for common acute and chronic and chronic medical and surgical conditions of the medical surgical patient. Principles of nutrition, asepsis, and pharmacology are continuous throughout medical surgical nursing.

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
42.0 Provide care for medical/surgical/oncology patients, utilizing nursing principles –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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		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
		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
42.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.RI.1.2	
42.02 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	
42.03 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 LAFS.1112.L.3.6 LAFS.1112.W.3.8 LAFS.1112.SL.1.1a LAFS.1112.RI.1.2	
42.04 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	
42.05 Identify common alterations in patients with psychological disorders.	LAFS.910.L.3.6 LAFS.910.W.3.8 LAFS.910.SL.1.1a LAFS.910.RI.1.2	

CTE Standards and Benchmarks	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	
42.06 Care for the patient with respiratory disease/disorder.		
42.07 Care for the patient with cardio-vascular disease/disorder.		
42.08 Care for the patient with muscular-skeletal disease/disorder.		
42.09 Care for the patient with nervous, skin, and sensory disease/disorder.		
42.10 Care for the patient with reproductive disease/disorder.		
42.11 Care for the patient with urinary disease/disorder.		
42.12 Care for the patient with digestive disease/disorder.		
42.13 Care for the patient with endocrine disease/disorder.		
42.14 Care for the patient with an oncologic disease/disorder.		

Florida Department of Education
Student Performance Standards

Course Title: **Practical Nursing 6**
Course Number: **8418360**
Course Credit: **1**

Course Description:

This course is a continuation of Practical Nursing 5 and may be concurrent with Practical Nursing 5. 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: **Practical Nursing 7**
Course Number: 8418370
Course Credit: 1

Course Description:

This course is a continuation of Practical Nursing 5 and 6 and may be concurrent with Practical Nursing 5 or 6. 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.

This course will provide the student with the opportunity to learn to plan, administer, and evaluate the nursing care of patients with complicated disorders of all systems of the body. Experiences will afford students with the opportunity to study the comprehensive principles of nursing dealing with the entire health team. Emphasis is placed on the development of confidence in performing nursing skills, skills in group planning for patient care, and the utilization of all available hospital and community resources for meeting the total needs of the patient.

Florida Department of Education
Student Performance Standards

Course title: **Practical Nursing 8**
Course number: **8418380**
Course credit: **1**

Course Description: This course provides information regarding the proper care of maternal, newborn and pediatric patients including prenatal, delivery and postnatal care of the mother and newborn. The course also includes skills for the obtaining employment as a practical nurse.

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
43.0 Provide care for maternal/newborn patients, utilizing nursing principles–The student will be able to:		SC.912.L.14.38 SC.912.L.14.41
43.01 Describe prenatal care.	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	
43.02 Assist with admitting patient to labor and delivery.		
43.03 Monitor contractions.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	
43.04 Monitor fetal heart rate.	MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6B	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
43.05 Recognize signs of fetal distress.	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	
43.06 Assist with preparing patient for Caesarean.		
43.07 Describe 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	
43.08 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	
43.09 Suction infant's respiratory passage with bulb syringe.		
43.10 Identify infant using mother's bracelet.		
43.11 Weigh and measure infant.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	MAFS.912.A.SSE.1.1 MAFS.912.A.REI.2.3 MAFS.912.S-ID.2.5 MAFS.912.S-ID.2.6b	
43.12 Bathe infant.		
43.13 Carry infant.		
43.14 Feed infant.		
43.15 Collect urine specimen from infant.		
43.16 Provide post-partum care.		
43.17 Demonstrate and perform perineal care.		
43.18 Assist in breast care.		
43.19 Assist mother with infant care.		
43.20 Assist with Infant circumcision.		
43.21 Apply dressing to circumcision site.		
43.22 Clean infant genitalia and diaper.		
43.23 Discharge obstetric patient.		
44.0 Provide care for pediatric patients, utilizing nursing principles–The student will be able to:		
44.01 Adapt nursing care for the pediatric patient.		
44.02 Apply safety principles for the pediatric patient.		
44.03 Describe general characteristics, particular needs, and problems of pediatric patients.	LAFS.910.SL.1.1a LAFS.910.RI.1.2	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	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	
44.04 Prepare patient and family for the hospital experience.		
44.05 Identify signs and symptoms of common disorders/diseases.		
44.06 Implement prescribed nutritional requirement.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
44.07 Provide diversion and recreational activities.		
45.0 Demonstrate employability skills specific to practical nursing--The student will be able to:		
45.01 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	
45.02 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
45.03 Identify employment opportunities for licensed practical nurses.	LAFS.910.W.2.6 LAFS.1112.W.2.6	
45.04 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	
45.05 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	
45.06 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.W.2.4	
	LAFS.1112.W.3.7	
	LAFS.1112.W.4.10	

Florida Department of Education
Student Performance Standards

Course Title: **Practical Nursing 9**
Course Number: **8418390**
Course Credit: **1**

This course is a continuation of Practical Nursing 8 and may be concurrent with Practical Nursing 8.

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.

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

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 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 who have successfully completed the program Articulated Nursing Assistant, or the program, Patient Care Technician should be given advanced standing and can enter the program following OCP B or beyond.

Following successful completion of the OCP B, the student is eligible to apply to take the CNA examination.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources
For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31	
Standard Length	3 credits	
Teacher Certification	Health Science Core	ANY HEALTH OCCUP G *([See DOE approved list](#))
	Electrocardiograph Technician 3	LAB TECH @7 7G LAB ASST @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)
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 29-2031 Cardiovascular Technologists and Technicians	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	

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 (Previously titled Health Science 1)
    8417110 - Health Science Foundations (Previously titled Health Science 2)

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
	8417100	Health Science Anatomy and Physiology	1 credit	31-9099	3	VO
A	8417110	Health Science Foundations	1 credit	31-9099	2	VO
B	8427130	Electrocardiograph Technician 3	1 credit	29-2031	2	VO

Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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%

** 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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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 1-30 encompass the Health Science Core:

01.0   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Allied Health Assisting.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Allied Health Assisting.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Allied Health Assisting.
04.0   Analyze and interpret an overview of the human body, including organization and chemical process.
05.0   Apply correct medical terminology relating to body structure and function within a real-world application.
06.0   Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions.
07.0   Analyze the integumentary system in relation to health and disease.
08.0   Analyze the skeletal system in relation to health and disease.
09.0   Analyze the muscular system in relation to health and disease.
10.0   Analyze the nervous system in relation to health and disease.
11.0   Analyze the endocrine system in relation to health and disease.
12.0   Analyze the cardiovascular/circulatory system in relation to health and disease.
13.0   Analyze the lymphatic and immune systems in relation to health and disease.
14.0   Analyze the respiratory system in relation to health and disease.
15.0   Analyze the digestive system in relation to health and disease.
16.0   Analyze the urinary system in relation to health and disease.
17.0   Analyze the both the male and female reproductive systems in relation to health and disease.
18.0   Identify and explain factors relating to genetics and disease.
19.0   Evaluate and apply the principles of disease transmission and control to real-world scenarios.
20.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
21.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
22.0   Demonstrate legal and ethical responsibilities.
23.0   Demonstrate an understanding of and apply wellness and disease concepts.
24.0   Recognize and practice safety and security procedures.
25.0   Recognize and respond to emergency situations.
26.0   Recognize and practice infection control procedures.
27.0   Demonstrate an understanding of information technology applications in healthcare.
28.0   Demonstrate employability skills.
29.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
30.0   Apply basic math and science skills.

Standards 31-40 encompass competencies specific to EKG Technician:

31.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Electrocardiograph Aide.
32.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Electrocardiograph Aide.
33.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Electrocardiograph Aide.
34.0   Describe the cardiovascular system.
35.0   Identify legal and ethical responsibilities of an EKG technician.
36.0   Demonstrate knowledge of, apply and use medical instrumentation modalities.
37.0   Perform patient care techniques in the health care facility.
38.0   Recognize normal and abnormal monitoring and testing results.
39.0   Describe cardiovascular drugs, their actions, use and adverse effects.
40.0   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.

You can access the course outline by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

You can access the course standards and benchmarks by visiting this link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_core_secondary_1516.rtf

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.

Florida Standards	Correlation to CTE Program Standard #
31.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Electrocardiograph Aide.	
31.01 Key Ideas and Details	
31.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
31.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
31.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
31.02 Craft and Structure	
31.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
31.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
31.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.1112.RST.2.6	
31.03 Integration of Knowledge and Ideas	
31.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem.	
LAFS.1112.RST.3.7	
31.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	
LAFS.1112.RST.3.8	
31.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	
LAFS.1112.RST.3.9	
31.04 Range of Reading and Level of Text Complexity	
31.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
31.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.	
LAFS.1112.RST.4.10	
32.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Electrocardiograph Aide.	
32.01 Text Types and Purposes	
32.01.1 Write arguments focused on discipline-specific content.	
LAFS.1112.WHST.1.1	
32.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
LAFS.1112.WHST.1.2	
32.02 Production and Distribution of Writing	
32.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
LAFS.1112.WHST.2.4	
32.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
LAFS.1112.WHST.2.5	

Florida Standards	Correlation to CTE Program Standard #
32.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
32.03 Research to Build and Present Knowledge	
32.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
32.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
32.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
32.04 Range of Writing	
32.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
33.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Electrocardiograph Aide.	
33.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
33.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
33.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
33.04 Model with mathematics. MAFS.K12.MP.4.1	
33.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
33.06 Attend to precision. MAFS.K12.MP.6.1	

Florida Standards	Correlation to CTE Program Standard #
33.07 Look for and make use of structure. MAFS.K12.MP.7.1	
33.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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 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
34.01 Locate the heart and surrounding structures.	LAFS.1112.RI.3.7	
34.02 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	
34.03 Trace the flow of blood through the cardiopulmonary system.	LAFS.1112.SL.2.4 LAFS.1112.W.2.4	
34.04 Identify and describe the electrical conduction system.		
34.05 Describe the function of the autonomic nervous system.		
34.06 Describe a patient demonstrating poor perfusion and understand the importance of rapid reporting.		
35.0 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
35.01 Recognize and practice legal and ethical responsibilities as they relate to an EKG aide.	LAFS.1112.W.2.4	
35.02 Maintain a safe and efficient work environment.	LAFS.1112.SL.1.2	
35.03 Maintain EKG equipment so it will be safe and accurate.	LAFS.1112.SL.1.2	
35.04 Implement appropriate Joint Commission patient safety goals and other applicable accrediting/regulatory agency guidelines.	LAFS.1112.SL.1.2	
36.0 Demonstrate knowledge of, apply and use medical instrumentation modalities.-The		SC.912.L.14.37

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
student will be able to:		SC.912.N.1.1 SC.912.P.10.20 SC.912.P.12.2 SC.912.P.12.9
36.01 Calibrate and standardize the cardiograph instrument.	LAFS.1112.SL.1.2	
36.02 Identify three types of lead systems.	LAFS.1112.SL.2.5 LAFS.1112.RI.3.7	
36.03 State Einthoven's triangle.	LAFS.1112.SL.1.2	
36.04 Demonstrate proper lead placement including lead placement for patients with special needs to include pediatric, posterior and right sided EKGs.	LAFS.1112.SL.1.2	
36.05 Identify artifacts and mechanical problems.	LAFS.1112.SL.2.5	
36.06 Perform a 12 lead EKG.	LAFS.11.12.RI.3.7 LAFS.1112.SL.1.2	
36.07 Recognize normal sinus rhythm.	LAFS.1112.SL.2.5	
36.08 Report any rhythm that is not normal sinus rhythm.	LAFS.1112.RI.2.4 LAFS.1112.RI.3.7	
36.09 Recognize and respond cardiac emergency as seen on the EKG and understand the importance of rapid reporting.	LAFS.1112.SL.2.4 LAFS.1112.RI.2.4	
36.10 Use documentation skills to identify electrocardiographs.	LAFS.1112.SL.2.4	
37.0 Perform patient care techniques in the health care facility.--The student will be able to:		SC.912.N.1.1
37.01 Describe the physical and mental preparation of the patient for EKG testing.	LAFS.1112.W.2.4	
37.02 Identify patient and verify the requisition order.	LAFS.1112.W.2.4	
37.03 Prepare patient for cardiovascular diagnostic testing.	LAFS.1112.SL.2.4	
37.04 Take patient's vitals in preparation for cardiovascular diagnostic testing and report abnormalities.		
37.05 State precautions required when performing cardiovascular diagnostic procedures.	LAFS.1112.SL.2.4	
37.06 Convey the importance of maintaining a safe patient environment and evaluate potential hazards in each environment.		
38.0 Recognize normal and abnormal monitoring and testing results.--The student will be able to:		
38.01 Measure waves, segments, complexes, rates and intervals.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
38.02 Identify electrical axis.		
38.03 List purposes for pacemakers and indications for insertion.		
38.04 Recognize normal and deviations from normal sinus rhythms.		
38.05 Recognize all atrial rhythms.		
38.06 Recognize all atrioventricular rhythms.		
38.07 Recognize all ventricular rhythms.		
38.08 Recognize all types of heart blocks.		
38.09 Recognize normal and deviations from normal pacemaker rhythms.		
38.10 Recognize indications of myocardial ischemia and infarction.		
38.11 Recognize allatrial and ventricular hypertrophies.		
38.12 Recognize allextrasystole and other rare phenomena.		
38.13 Recognize normal and deviations from normal 12 lead EKG results.		
38.14 Describe potential patient responses to brady- or tachy-dysrhythmias as well as other EKG abnormalities.		
38.15 Recognize and respond promptly to cardiac emergency through rapid reporting while monitoring rhythms.		
39.0 Describe cardiovascular drugs, their actions, use and adverse effects.--The student will be able to:		
39.01 Describe mechanisms by which common cardiovascular drugs work including actions and adverse effects..		
39.02 Differentiate between normal and abnormal EKG changes due to drugs.		
40.0 Demonstrate knowledge of other cardiovascular diagnostic modalities.--The student will be able to:		
40.01 Demonstrate knowledge of the application of a Holter Monitor and provide patient education of its use.		
40.02 Demonstrate the procedures for preparing the patient for stress testing/scanning exercise treatment.		
40.03 Understand and demonstrate patient documentation for all types of monitoring.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
40.04 Describe other modalities of cardiovascular diagnosis and interpretation.		
40.05 Maintain patient cardiac alarm policy at all times.		

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

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

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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31
Standard Length	4 credits
Teacher Certification	BIOLOGY 1 @2 REG NURSE 7 G MED PROF 7 G PARAMEDIC @7 7G PLTW HEALTH 7G
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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.

The following table illustrates the secondary program structure:

Course Number	Course Title	Length	Level	Graduation Requirement
8708110	Principles of the Biomedical Sciences	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	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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
8708110	26/87 30%	9/80 11%	52/83 63%	8/69 12%	27/67 40%	10/70 14%	24/69 35%	38/82 46%	9/66 14%	33/74 45%	5/72 7%
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%

Course											
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%

** 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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

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   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Biomedical Sciences.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Biomedical Sciences.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.
04.0   Demonstrate an understanding of the nature of science and how to correctly use appropriate scientific equipment
05.0   Describe the importance of professional ethics and legal responsibilities
06.0   Understand the structure and functions of the major human body systems, the organs making up these systems and the interconnections between body systems
07.0   Understand how determining the cause of death involves the investigation of many aspects of the medical condition of the victim
08.0   Explore various careers related to biomedical science and its impact
09.0   Understand and describe the importance of the circulatory system by examining the structure and function of the heart
10.0   Understand and describe the importance of blood in relation to the circulatory system and the human body
11.0   Demonstrate an understanding of how food and water are essential to the health of the human body
12.0   Describe how food provides nutrients for the body to help maintain homeostasis
13.0   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
14.0   Investigate the significance of DNA and Chromosomes in the human body
15.0   Describe factors that contribute to sickle cell disease and the impact it can have on the human body
16.0   Understand the factors involved in heredity and mutation in relation to sickle cell disease
17.0   Examine how changes in chromosomes or genes can cause disease/chromosomal abnormalities
18.0   Demonstrate an understanding of the function of cholesterol in the body and its role in heart disease
19.0   Describe molecular biological techniques for diagnosing diseases, specifically hypercholesterolemia
20.0   Demonstrate an understanding of bacteria as a cause for infectious diseases
21.0   Investigate the basic and complex commonalities between all humans
22.0   Explore the individual differences in tissues and cells between humans and its significance to individual identity
23.0   Investigate the significance of DNA in relation to individual identity
24.0   Investigate the role the brain plays in the communication system of the human body
25.0   Determine how electrical communication works in the body and its effects
26.0   Determine how chemical communication works in the body and its effects
27.0   Investigate how the human body communicates with the outside world
28.0   Describe the role food plays in the conversion and use of energy in the body
29.0   Describe the role that oxygen plays in the conversion and use of energy in the body
30.0   Describe the role that water plays in the conversion and use of energy in the body
31.0   Demonstrate an understanding of how joints directly contribute to the movement of the human body
32.0   Demonstrate an understanding of how muscles directly contribute to the movement of the human body

33.0 Demonstrate an understanding of how blood flow aides in the movement of the substances through the human body
34.0 Using knowledge of power and movement in the human body, describe how the body fuels and responds to exercise
35.0 Describe the composition of skin and how the integumentary system serves as a protection for the human body
36.0 Describe the composition of bones and how the skeletal system serves as a protection for the human body
37.0 Describe the composition the immune system and how it serves as a protection for the human body
38.0 Examine the connection between all of the human body systems and how these systems work together to maintain health and homeostasis
39.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Biomedical Sciences.
40.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Biomedical Sciences.
41.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.
42.0 Investigate the variety of interventions involved in the prevention, diagnosis and treatment of infectious disease
43.0 Explore the factors that contribute to the effectiveness of antibiotics against infectious diseases
44.0 Investigate hearing loss as a detrimental effect of infectious disease
45.0 Explore vaccination as a mode of infectious disease prevention
46.0 Investigate the available types of genetic testing/screening and their ethical implications
47.0 Examine the current reproductive technology and discuss medical interventions of the future
48.0 Explore the diagnostic techniques and technology being used to better diagnose and understand cancer
49.0 Explore the potential risk factors associated with cancer and the various situations which cause changes to DNA
50.0 Investigate the treatments and therapies available to treat cancer and its physical, mental and emotional effects
51.0 Explore the future of medical interventions for cancer
52.0 Explore the medical implications of proteins produced and purified in a laboratory setting
53.0 Investigate the causes and treatments for kidney failure
54.0 Explore the process, policies and procedures involved for organ transplantation
55.0 Investigate how advances in medical knowledge and technology can aid in building a better human body for the future
56.0 Investigate biomedical problems related to clinical care by designing an effective emergency care center
57.0 Explore the variety of research study designs available and investigate how to set up and conduct valid and reliable studies
58.0 Explore the process, knowledge and skills required to design a medical innovation
59.0 Explore biomedical innovation through investigating water contamination
60.0 Evaluate a public health issue and combat the problem using knowledge of epidemiology, disease diagnosis and public health resources
61.0 Understand medical research and the process of writing a scientific grant
62.0 (Optional) Use modern molecular biology techniques to clone and transfer DNA
63.0 (Optional) Assuming the role of a medical expert, investigate a mysterious death using forensics autopsy techniques
64.0 (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.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Biomedical Sciences.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific	

		words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. LAFS.910.RST.2.4	
	01.02.2	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). LAFS.910.RST.2.5	
	01.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. LAFS.910.RST.2.6	
01.03	Integration of Knowledge and Ideas		
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. LAFS.910.RST.3.7	
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. LAFS.910.RST.3.8	
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. LAFS.910.RST.3.9	
01.04	Range of Reading and Level of Text Complexity		
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently. LAFS.910.RST.4.10	
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Biomedical Sciences.		
02.01	Text Types and Purposes		
	02.01.1	Write arguments focused on discipline-specific content. LAFS.910.WHST.1.1	
	02.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.910.WHST.1.2	
02.02 Production and Distribution of Writing	
02.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.910.WHST.2.4	
02.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.910.WHST.2.5	
02.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. LAFS.910.WHST.2.6	
02.03 Research to Build and Present Knowledge	
02.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.910.WHST.3.7	
02.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. LAFS.910.WHST.3.8	
02.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.910.WHST.3.9	
02.04 Range of Writing	
02.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.910.WHST.4.10	
03.0 Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.	
03.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
03.02 Reason abstractly and quantitatively.	

Florida Standards			Correlation to CTE Program Standard #
		MAFS.K12.MP.2.1	
03.03	Construct viable arguments and critique the reasoning of others.		
		MAFS.K12.MP.3.1	
03.04	Model with mathematics.		
		MAFS.K12.MP.4.1	
03.05	Use appropriate tools strategically.		
		MAFS.K12.MP.5.1	
03.06	Attend to precision.		
		MAFS.K12.MP.6.1	
03.07	Look for and make use of structure.		
		MAFS.K12.MP.7.1	
03.08	Look for and express regularity in repeated reasoning.		
		MAFS.K12.MP.8.1	

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
04.0	Demonstrate an understanding of the nature of science and how to correctly use appropriate 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
04.01	Identify what is science, what clearly is not science and what can superficially resembles science but does not meet the criteria for science.	LAFS.910.RI.2.4 LAFS.910.W.3.7	
04.02	Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion.	LAFS.910.RI.2.4 LAFS.910.W.3.7	
04.03	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	
04.04	Practice and demonstrate how to properly and safely use a microscope.	LAFS.910.SL.1.1 LAFS.910.RI.2.4 MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
05.0 Describe the importance of professional ethics and legal responsibilities. –The student will be able to:		
05.01 Discuss of the basics of the legal framework of the healthcare occupations	LAFS.910.SL.1.1 LAFS.910.RI.3.9	
05.02 Explain common practices that could result in malpractice, liability and/or negligence.	LAFS.910.SL.1.1 LAFS.910.W.1.2	
05.03 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	
05.04 Describe the purpose of Informed Consent from the patient and provider perspective.	LAFS.910.SL.1.1	
05.05 Differentiate between legal and ethical issues in healthcare.	LAFS.910.SL.1.1	
05.06 Evaluate and justify decisions based on ethical reasoning.	LAFS.910.SL.1.1 LAFS.910.RI.3.8	
05.07 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
06.0 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 SC.912.L.14.52 SC.912.L.16.3
06.01 Identify the major body systems and their functions.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.910.W.2.4 LAFS.910.RI.2.4	
06.02 Demonstrate an understanding of how body systems work together to maintain good health.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.RI.2.4	
06.03 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	
06.04 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	
06.05 Describe how parts of the human body systems work together to perform the job of the entire system.	LAFS.910.SL.2.4 LAFS.910.L.3.4C,D LAFS.910.W.2.4 LAFS.910.W.2.6 LAFS.910.RI.2.4	
06.06 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	
07.0 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:		
07.01 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.		
07.02 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	
07.03 Recognize that bloodstain patterns left at a crime scene can help investigators establish the events that took place during the crime.		
07.04 Analyze key information gathered at a simulated crime scene.		
07.05 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	LAFS.910.RI.1.1 LAFS.910.RI.2.4 LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
analysis of tissues and body fluids.	LAFS.910.W.1.2 LAFS.910.W.2.4	
07.06 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	
08.0 Explore various careers related to biomedical science and its impact. –The student will be able to:		
08.01 Discuss and describe the role of a variety of biomedical sciences professionals that are involved in determining the cause of death.		
08.02 Describe the role of a certified medical examiner in reducing the chance of death to those on the road (Truckers-DOT/FMSCA), in the air (AC Pilots), and in the water (Boat Captains).	LAFS.910.W.3.7 LAFS.910.SL.1.2	
08.03 Compare and contrast the role of the medical examiner and the coroner.		
08.04 Investigate and discuss a variety of biomedical sciences careers that relate to the prevention, diagnosis, and treatment of both cardiovascular and infectious disease.		
09.0 Understand and describe the importance of the circulatory 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
09.01 Describe and demonstrate how a simple and a two-chambered pump works.	LAFS.910.L.3.6 LAFS.910.SL.1.1B LAFS.910.SL.1.2 LAFS.910.W.3.7	
09.02 Understand and discuss that the human heart is a four-chambered living pump that provides the force needed to transport blood, both oxygenated and un-oxygenated, throughout the body without mixing the two types of blood.	LAFS.910.SL.1.1	
09.03 Identify and describe the gross structures and functions of the heart.	LAFS.910.W.1.2 MAFS.912.G-GMD.2.4	
09.04 Understand how a heartbeat is caused by the contraction of cardiac muscle cells that result in the movement of blood from the heart to the arteries and to the whole body.	LAFS.910.W.2.4	
09.05 Calculate heart rate as the number of heart contractions per unit of time, most commonly done as beats per minute.	MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	
09.06 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	MAFS.912.F-LE.2.5	
09.07 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	
09.08 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	
09.09 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	
09.10 Demonstrate the importance of technology in biomedical sciences by using software and equipment to collect and analyze cardiovascular data.		
10.0 Understand and describe the importance of blood in relation to the circulatory 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
10.01 Explain that blood is a liquid connective tissue composed of red cells, white cells and platelets that are suspended in liquid plasma.	LAFS.910.W.2.4	
10.02 Compare and contrast the functions of red cells, white cells, platelets and erythrocytes	LAFS.910.W.2.4 LAFS.910.SL.1.1	
10.03 Recognize that blood is a major transport for many substances in the body that must be replenished throughout life including hormones, gases, molecules and nutrients.		
10.04 Examine using a microscope and sketch red and white blood cells as well as various types of human tissue.	LAFS.910.W.2.4 MAFS.912.N-Q.1.3	
11.0 Demonstrate an understanding of how food and water are essential 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
11.01 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
11.02 Compare and contrast the recommended daily values for food groups, minerals and vitamins.	LAFS.910.W.2.4 LAFS.910.SL.1.1	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
		MAFS.912.N-Q.1.3 MAFS.912.N-Q.1.1	
	11.03 Describe that food is made of molecules and macromolecules which in turn are made of atoms.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	11.04 Describe the structure and function of atoms.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	11.05 Describe how homeostasis depends upon many different chemical reactions and large organic molecules.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	11.06 Describe the role of chemical bonding in chemical reactions and transfer of energy.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
12.0	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
	12.01 Describe the function of macromolecules in relation to the breakdown of food and the human body.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	12.02 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	
	12.03 Explain the role of indicators in identifying chemical compounds.	LAFS.910.W.1.2 LAFS.910.SL.1.1	
	12.04 Describe different foods that contain each kind of nutrients.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
13.0	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:		
	13.01 Explain how many systems, living or non-living, operate using feedback mechanisms and that information put into a system causes a reaction within the system.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	13.02 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	
	13.03 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
		LAFS.910.SL.1.1	
	13.04 Compare Type 1 & Type 2 Diabetes.		
	13.05 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	
	13.06 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	
	13.07 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
	13.08 Investigate and describe the roles of Biomedical Sciences professions related to the treatment and prevention of Diabetes.		
14.0	Investigate the significance 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
	14.01 Describe the Structure and function of a chromosome.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	14.02 Describe the structure and function of deoxyribonucleic acid (DNA).	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	14.03 Explain the relationship between chromosomes, DNA and Genes.	LAFS.910.W.2.4 LAFS.910.SL.1.1 LAFS.910.W.3.7	
	14.04 Interpret the structure of a chromosome in relation to the size of a cell and the amount of DNA it contains.	LAFS.910.RI.1.1 LAFS.910.W.2.4	
	14.05 Explain the interactions between nucleotides using DNA models.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
	14.06 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	
	14.07 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	
	14.08 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	
	14.09 Explain how the sequence of amino acids in a protein determines the protein's structure.	LAFS.910.W.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
14.10 Describe the appropriate laboratory methods to isolate DNA from plant and animal cells.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
14.11 Explain how restriction enzymes cut DNA.		
14.12 Describe how gel electrophoresis separates DNA fragments.		
14.13 Recognize that gel electrophoresis can be used to examine DNA differences between individuals.		
15.0 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
15.01 Describe the difference between the appearance of normal and sickle cell blood.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
15.02 Describe the function of hemoglobin found in red cells.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
15.03 Describe affinity of CO v. O2 to the Hgb of a red blood cell and the practical importance of avoiding CO (auto, home heating systems, engines for pumps brought inside).		
15.04 Demonstrate how changes to the structure of a protein can change its ability to work properly.	LAFS.910.W.2.4	
15.05 Compare and contrast the differences between a normal and sickle red blood cell.	LAFS.910.W.2.4 LAFS.910.W.3.7	
15.06 List the major symptoms and complications of sickle cell disease.	LAFS.910.W.2.4 LAFS.910.W.3.7	
15.07 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	
15.08 Investigate and discuss biomedical sciences careers responsible for the diagnosis and treatment of Sickle Cell Disease.		
16.0 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
16.01 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
16.02 Identify and be able to use a karyotype to identify multiploidy and sex in an individual.	LAFS.910.W.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
	16.03 Compare and contrast between chromosomal and gene mutations.	LAFS.910.W.2.4 LAFS.910.W.3.7	
	16.04 Explain the results of insertion and deletion gene mutations and the effects that they have on the corresponding proteins produced by the gene. Or such as b-globin protein and their associations with Sickle Cell Disease.	LAFS.910.SL.1.1B	HE.912.C.1.7
	16.05 Describe the process of meiosis, including independent assortment.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
	16.06 Explain how reduction division results in the formation of haploid gametes.	LAFS.910.W.3.7	
	16.07 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	
	16.08 Analyze genotype to determine phenotype.		
	16.09 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	
	16.10 Explain how anemia and lack of energy in a cell are related.	LAFS.910.W.2.4 LAFS.910.W.3.7	
	16.11 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	
	16.12 Create and analyze pedigree charts to illustrate passage of a trait through at least three generations and calculate the probability of a trait appearing in offspring.	LAFS.910.W.2.4 LAFS.910.SL.2.4 MAFS.912.SCP.2.8 MAFS.912.S-CP.2.7	
17.0	Examine how changes in chromosomes or genes can cause disease/chromosomal abnormalities.–The student will be able to:		SC.912.L.16.4
	17.01 Define, identify and analyze karyotypes to determine multiploidy and sex.	LAFS.910.W.2.4	
	17.02 Explain how karyotypes are used to diagnose certain medical conditions such as Down Syndrome.	LAFS.910.W.2.4	
	17.03 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	
	17.04 Identify the structure and function of chromosomes and their role in individual traits of humans.		
	17.05 Explain how specific mutations lead to specified genetic diseases.	LAFS.910.W.2.4	
18.0	Demonstrate an understanding of the function of cholesterol in the body and its role in heart disease–The student will be able to:		SC.912.L.18.1 SC.912.L.18.3 SC.912.L.18.4

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
18.01 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	
18.02 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	
18.03 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	
18.04 Describe how the measurement of these complexes affects a person's risk for heart disease.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
18.05 Describe the function of an angiogram in diagnosing blocked vessels and list medical interventions to treat blocked vessels.		
18.06 Discuss risk factors for heart disease.		HE.912.C.1.5
19.0 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
19.01 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	
19.02 Explain using proper laboratory techniques how to separate DNA fragments by gel electrophoresis.	LAFS.910.W.2.4	
19.03 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	
20.0 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
20.01 Identify the basic structures of a bacterial cell.		
20.02 Explain that there are different types of bacteria and some cause disease while some do not.	LAFS.910.W.2.4 LAFS.910.W.3.7	
20.03 Classify bacteria by shape, metabolism and reaction to gram staining.	LAFS.910.W.2.4 LAFS.910.W.3.7	
20.04 Understand how antibiotics are used to treat infections and that their effectiveness depends on the type of bacteria that has caused the infection.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
20.05 Explain that overuse of antibiotics can cause resistance in bacteria and what that means to human health.	LAFS.910.W.2.4	
20.06 Describe the immune response in relation to the introduction of antigens.		
20.07 Isolate and examine bacterial colonies using aseptic techniques.		
20.08 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.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Biomedical Sciences.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical	

Florida Standards			Correlation to CTE Program Standard #
		context relevant to grades 9–10 texts and topics. LAFS.910.RST.2.4	
	01.02.2	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). LAFS.910.RST.2.5	
	01.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. LAFS.910.RST.2.6	
01.03	Integration of Knowledge and Ideas		
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. LAFS.910.RST.3.7	
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. LAFS.910.RST.3.8	
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. LAFS.910.RST.3.9	
01.04	Range of Reading and Level of Text Complexity		
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently. LAFS.910.RST.4.10	
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Biomedical Sciences.		
02.01	Text Types and Purposes		
	02.01.1	Write arguments focused on discipline-specific content. LAFS.910.WHST.1.1	
	02.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.910.WHST.1.2	

Florida Standards	Correlation to CTE Program Standard #
02.02 Production and Distribution of Writing	
02.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.910.WHST.2.4	
02.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.910.WHST.2.5	
02.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. LAFS.910.WHST.2.6	
02.03 Research to Build and Present Knowledge	
02.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.910.WHST.3.7	
02.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. LAFS.910.WHST.3.8	
02.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.910.WHST.3.9	
02.04 Range of Writing	
02.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.910.WHST.4.10	
03.0 Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.	
03.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
03.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	

Florida Standards		Correlation to CTE Program Standard #
03.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
03.04	Model with mathematics. MAFS.K12.MP.4.1	
03.05	Use appropriate tools strategically. MAFS.K12.MP.5.1	
03.06	Attend to precision. MAFS.K12.MP.6.1	
03.07	Look for and make use of structure. MAFS.K12.MP.7.1	
03.08	Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
21.0	Investigate the basic and complex commonalities between all humans. --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 SC.912.L.16.13 SC.912.N.1.4
21.01	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
21.02	Describe how multiple body systems are interconnected.	LAFS.910.W.2.4 LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
21.03 Describe how the interconnections and interactions of multiple body systems are necessary for life.	LAFS.910.W.1.2F LAFS.910.W.3.8 LAFS.910.SL.1.1A,C,D	
21.04 Explain how directional terms and regional terms can be used to identify locations on the body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
21.05 Demonstrate 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	
21.06 Apply knowledge of human body systems to indicate how damage to one system can impact function in another system.	LAFS.910.W.1.2F LAFS.910.SL.1.1	
21.07 Discuss similarities between all humans and relate this discussion to human identity.	LAFS.910.SL.1.1 LAFS.910.W.4.10	
21.08 Reflect on student's own identity.	LAFS.910.W.4.10	
22.0 Explore the individual differences in tissues and cells between humans and its significance to individual identity. –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
22.01 Describe the differences in the appearance of epithelial and connective tissues.	LAFS.910.L.3.4 LAFS.910.RI.3.7	
22.02 Explain the basic structure and function of the skeletal system.	LAFS.910.L.3.4 LAFS.910.W.2.4	
22.03 Model tissue placement in the face around the eyes and mouth.		
22.04 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	
22.05 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	
23.0 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
23.01 Explain in general how restriction enzymes cut DNA.	LAFS.910.SL.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	LAFS.910.W.3.8	
23.02 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	
23.03 Interpret gel electrophoresis results to solve a missing person's case.	LAFS.910.W.1.2F	
23.04 Define biometrics and the ethical issues associated with it.	LAFS.910.L.3.4 LAFS.910.SL.1.3	
23.05 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	
23.06 Design a comprehensive security plan for a real-world situation.	LAFS.910.W.2.5 LAFS.910.W.2.6 LAFS.910.RI.3.7 LAFS.910.L.1.1	
23.07 Read an interview with a forensic anthropologist and write an interview with a DNA analyst.	LAFS.910.RI.2.5 LAFS.910.RI.2.6 LAFS.910.SL.2.4 LAFS.910.W.1.2B	
24.0 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
24.01 Describe the general structure and function of the central nervous system.	LAFS.910.L.3.4 LAFS.910.W.2.4	
24.02 Interpret how a breakdown in communication would impact the function of the human body.	LAFS.910.W.1.2F LAFS.910.SL.1.1B	
24.03 Determine the region of the brain responsible for specific actions, emotions, or functions of humans.	LAFS.910.W.1.2B LAFS.910.W.3.7 LAFS.910.L.3.4	
24.04 Apply knowledge of brain function to determine the parts of the brain used to complete a list of daily activities.	LAFS.910.W.1.2B,F LAFS.910.SL1.1A	
25.0 Determine how electrical communication works in the body and its effects. –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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.L.16.10 SC.912.N.1.1
25.01 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	
25.02 Explain the roles of ions in creating electrical impulses in the human body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
25.03 Explain in general terms how neurotransmitters help propagate electrical impulses.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
25.04 Describe neuron structure and function.	LAFS.910.L.3.4 LAFS.910.W.3.7	
25.05 Discuss the generalities of ascending and descending pathways of the CNS.	LAFS.910.SL.1.1	
25.06 Understand how reflex versus reaction time applies to pathways of processing in the brain.	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	
25.07 Demonstrate an understanding of how a serious nervous system disorder impacts quality of life.	LAFS.910.SL.1.1B LAFS.910.L.3.4 LAFS.910.W.1.2F	
25.08 Research and report on 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	
25.09 Using data acquisition software to complete a laboratory investigation on the reflexes in the human body 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	
26.0 Determine how chemical communication works in the body and its effects. –The student will be able to:		SC.912.L.14.29 SC.912.L.14.30 SC.912.L.14.31 SC.912.L.14.32 SC.912.N.1.1 SC.912.N.1.6
26.01 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	
26.02 Explain the difference between endocrine and exocrine glands as well as	LAFS.910.L.3.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
protein/peptide and steroid hormones.	LAFS.910.W.1.2D,F	
26.03 Use the internet to research and use the research to interpret the symptoms and physical characteristics of a given patient to determine an endocrine system malfunction.	LAFS.910.L.3.4 LAFS.910.W.1.2F	
26.04 Explain in general how hormones contribute to maintain homeostasis.	LAFS.910.L.3.4 LAFS.910.W.1.2F	
26.05 Understand how a team of medical professionals use an evidence board to help in solving a medical case.	LAFS.910.SL.1.1B,D LAFS.910.W.2.4	
27.0 Investigate how the human body communicates with the outside world. –The student will be able to:		SC.912.L.14.50
27.01 Describe the structures and function of the eye.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
27.02 Describe how the eye and the brain work together to allow a person to see.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
27.03 Explain 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	
27.04 Discuss how a medical examiner uses a Snellen Chart at 20 feet with optical occluder (cover) to isolate each eye for individual sight.	LAFS.910.L.3.4 LAFS.910.W.2.4	
27.05 Interpret results from vision testing.	LAFS.910.W.1.2F	
27.06 Understand that different types of lenses will refocus light and correct problems with vision.	LAFS.910.W.2.4 LAFS.910.SL.1.2	
27.07 Understand the difference between an optometrist, an ophthalmologist and an optician.		
28.0 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 SC.912.N.1.1 SC.912.N.3.5
28.01 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
28.02 Describe the structure and function of organs in the human digestive system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
28.03 Explain that energy is stored and released from ATP.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
28.04 Assess overall health through analysis of calories consumed and calories expended in daily activities.	LAFS.910.RI.1.2	
28.05 Explain the structure and function of, enzymes and co enzymes and how they all work together.	LAFS.910.W.2.4	
28.06 Explain the importance of enzymes on maintaining homeostasis in the human body.	LAFS.910.W.2.4 LAFS.910.SL.1.1	
28.07 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	
28.08 Interpret enzyme function in the digestive system through laboratory experiments.	LAFS.910.W.1.2F LAFS.910.SL.1.1B	
28.09 Build a model of the human digestive system		
28.10 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	
29.0 Describe the role that oxygen plays in the conversion and use of energy in the body. – The student will be able to:		SC.912.L.14.43 SC.912.L.14.44
29.01 Describe the structure and function of the human respiratory system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
29.02 Explain that oxygen and carbon dioxide are exchanged in the lungs and where this occurs.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
29.03 Explain the transport of oxygen to all cells in the body through the close connection between the respiratory and cardiovascular systems.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
29.04 Interpret data charts and graphs to determine tidal volume, aspiratory reserve volume, expiratory reserve volume, and vital capacity of lungs.	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 MAFS.912.G-MG.1.2	
29.05 Understand the difference between short term control and long term control via medication and that there are different administration routes for each.	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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	MAFS.912.N-Q.1.3 MAFS.912.G-MG.1.2	
29.06 Explore the education and career path of a respiratory therapist.	LAFS.910.W.3.7	
30.0 Describe the role that water plays in the conversion and use of energy in the body. – 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
30.01 Describe the structure and function of the human urinary system.	LAFS.910.L.3.4 LAFS.910.W.3.7	
30.02 Describe the structure and function of the kidney.	LAFS.910.L.3.4 LAFS.910.W.3.7 MAFS.912.G-GMD.2.4	
30.03 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	
30.04 Understand that aldosterone and ADH (anti-diuretic hormone) effect the nephron and overall water balance.	LAFS.910.SL.1.1 LAFS.910.W.1.2F	
30.05 Illustrate the composition of normal blood and normal urine.		
30.06 Build a model of the urinary system.	MAFS.912.G-GMD.2.4	
30.07 Test simulated urine sample and apply knowledge to diagnose disease.	LAFS.910.L.3.4 LAFS.910.W.1.2F	HE.912.C.1.5
30.08 Analyze the use of urinalysis as a medical intervention.	LAFS.910.W.1.2F LAFS.910.RI.2.4	
31.0 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
31.01 Describe the structure and function of the three types of human body joints.	LAFS.910.L.3.4 LAFS.910.SL.1.1 LAFS.910.RI.2.4	
31.02 Describe using appropriate vocabulary, the motion of bones in the different joint types.	LAFS.910.L.3.4 LAFS.910.SL.1.1 LAFS.910.RI.2.4	
31.03 Identify range of motion measurements to specific joint actions and develop a plan to measure the range of motion.	LAFS.910.W.1.2A,B MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	
31.04 Compare the structure of a cow elbow to a human elbow.	LAFS.910.W.1.2F	
31.05 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	
31.06 Discuss ways to improve joint flexibility such as stretching and other lifestyle modifications.	LAFS.910.SL.1.1 LAFS.910.W.4.10	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
32.0 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
32.01 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	
32.02 Identify specific muscles by deciphering muscle names.		
32.03 Describe the requirements for muscle contraction.	LAFS.910.L.3.4 LAFS.910.RI.2.4 LAFS.910.SL.1.1	
32.04 Explain the sliding filament mechanism of muscle contraction.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.05 Explain the connection between nerves and muscle.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.06 Interpret muscle function by examining structure and attachment to bone.	LAFS.910.W.1.2F	
32.07 Build a model of a muscle group.	MAFS.912.G-GMD.2.4	
32.08 By using the sliding filament theory, explain why rigor mortis occurs.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
32.09 Discuss how muscle contributes to human identity.	LAFS.910.SL.1.1 LAFS.910.W.4.10	
32.10 Identify some of the many roles of calcium in the body.	LAFS.910.W.1.2A,B	
33.0 Demonstrate an understanding of how blood flow aides in the movement of the 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
33.01 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	
33.02 Define pulse and blood pressure, and locate pulse points on the body.	LAFS.910.L.3.4	
33.03 Identify major arteries and veins and specify the body region each supplies.	LAFS.910.L.3.4 LAFS.910.W.2.4	
33.04 Interpret ankle brachial index (ABI) to determine possible blood vessel blockages.	LAFS.910.W.1.2F LAFS.910.SL.1.1B	

CTE Standards and Benchmarks			FS-M/LA	NGSSS-Sci/HE
			MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3 MAFS.912.S-IC.2.6	
	33.05	Understand the relationship between the amount of blood pumped by the heart, through analysis of cardiac output values, and the health of other body organs and systems.	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	
	33.06	Explore peripheral artery disease through the analysis of patient symptoms and diagnostic test results.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1B	HE.912.C.1.5
	33.07	Explain the structure and function of veins and explain how varicose veins form.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
	33.08	Build a model of the major circulatory routes.	MAFS.912.G-GMD.2.4	
	33.09	Analyze self-risk for cardiovascular disease.	LAFS.910.W.1.3A,E	HE.912.C.1.5
34.0		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
	34.01	Explain that the human body generates ATP for energy estimate and the time period that this energy will last.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1	
	34.02	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	
	34.03	Design experiments to test ability to overcome muscle fatigue.	LAFS.910.W.3.8 LAFS.910.L.2.4	
	34.04	Describe the major things that happen in the major body systems while running a race.	LAFS.910.W.3.7 LAFS.910.L.3.4	
	34.05	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	
	34.06	Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.	LAFS.910.L.3.4 LAFS.910.W.2.4	
35.0		Describe the composition of skin and how the integumentary system serves as a protection for the human body. –The student will be able to:		SC.912.L.14.51 SC.912.N.1.1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
35.01 Describe the structure and function of human skin.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
35.02 Explain burn degree terms in relation to damaged layers of the skin.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
35.03 Explain how burn damage to the skin affects function and homeostasis in the body.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
35.04 Explain in general how the human body senses and processes pain signals.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
35.05 Explain why pain is necessary to human survival.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
35.06 Compare normal human skin and burnt damaged skin.	MAFS.912.G-GMD.2.4	
35.07 Analyze the effects of rehabilitation of a burn victim and changes to everyday life.	LAFS.910.W.1.2F LAFS.910.W.1.3A,E	
36.0 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
36.01 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	
36.02 Describe types of bone fractures.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
36.03 Identify bone fractures on x-rays and describe possible damage to internal organs.	LAFS.910.L.3.4 LAFS.910.W.2.4	
36.04 Understand that the hormones calcitonin and parathyroid hormone have an effect on calcium balance and thus the strength of bone in the human body	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
36.05 Identify the stages of bone remodeling.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
36.06 Identify lifestyle choices that affect development and maintenance of healthy bones.	LAFS.910.L.3.4 LAFS.910.W.2.4	
37.0 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
37.01 Describe the general structure and function of the lymphatic and immune system.	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
37.02 Describe in general the interaction between antigens and antibodies.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
37.03 Explain the role of specified blood cells in specific immunity.	LAFS.910.RI.2.4 LAFS.910.SL.1.1 LAFS.910.L.3.4	
37.04 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	
37.05 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	
37.06 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	
38.0 Examine the connection between all of the human body systems and how these systems work together to maintain health and homeostasis. –The student will be able to:		SC.912.N.1.1
38.01 Describe the effects of an extreme external environment on human body systems.	LAFS.910.RI.2.4 LAFS.910.L.3.4 LAFS.910.SL.1.1	HE.912.C.1.3
38.02 Explain in general how body systems work together to maintain homeostasis and complete basic functions.	LAFS.910.SL.1.1 LAFS.910.W.2.4	
38.03 Understand how initial symptoms of an illness can lead to diagnosis and treatment.	LAFS.910.W.3.8 LAFS.910.L.3.4	
38.04 Understand the need to valuate medical data to create a unique 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	
38.05 Understand that different diseases require different medical interventions	LAFS.910.W.3.4 LAFS.910.W.3.7 LAFS.910.SL.1.1B LAFS.910.SL.2.4 LAFS.910.L.3.4B	HE.912.C.1.5
38.06 Research the role of various medical professionals to diagnose and treat a fictional patient.	LAFS.910.W.3.8 LAFS.910.L.3.4	
38.07 Reflect on self-identity.	LAFS.910.W.1.3A,E	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
38.08 Write a summary of career goals.	LAFS.910.W.4.10	

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.

Florida Standards	Correlation to CTE Program Standard #
39.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Biomedical Sciences.	
39.01 Key Ideas and Details	
39.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
39.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
39.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
39.02 Craft and Structure	
39.02.1 Determine the meaning of symbols key terms, and other domain-specific	

Florida Standards			Correlation to CTE Program Standard #
		words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
	39.02.2	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
	39.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. LAFS.1112.RST.2.6	
39.03	Integration of Knowledge and Ideas		
	39.03.1	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
	39.03.2	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
	39.03.3	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
39.04	Range of Reading and Level of Text Complexity		
	39.04.1	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	39.04.2	By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
40.0	Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Biomedical Sciences.		
40.01	Text Types and Purposes		
	40.01.1	Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
	40.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.1112.WHST.1.2	
40.02 Production and Distribution of Writing	
40.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
40.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	
40.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
40.03 Research to Build and Present Knowledge	
40.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
40.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
40.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
40.04 Range of Writing	
40.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
41.0 Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.	
41.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
41.02 Reason abstractly and quantitatively.	

Florida Standards			Correlation to CTE Program Standard #
		MAFS.K12.MP.2.1	
	41.03	Construct viable arguments and critique the reasoning of others.	
		MAFS.K12.MP.3.1	
	41.04	Model with mathematics.	
		MAFS.K12.MP.4.1	
	41.05	Use appropriate tools strategically.	
		MAFS.K12.MP.5.1	
	41.06	Attend to precision.	
		MAFS.K12.MP.6.1	
	41.07	Look for and make use of structure.	
		MAFS.K12.MP.7.1	
	41.08	Look for and express regularity in repeated reasoning.	
		MAFS.K12.MP.8.1	

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
42.0	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
	42.01 Define 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	
	42.02 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 LAFS.1112.SL.1.1	
	42.03 Explain how bacteria can be identified using their DNA sequences.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
	42.04 Investigate the significance of diagnostic tests for infectious diseases.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
	42.05 Graphically organize connections between individuals in a fictitious disease outbreak.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	42.06 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	
43.0	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
	43.01 Creatively describe the structure of a bacterial cell.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4	
	43.02 Investigate how antibiotics disrupt some of the pathways that bacteria need to survive.	LAFS.1112.W.3.7 LAFS.1112.W.2.4	
	43.03 Explain how bacteria use various pathways to gain resistance to antibiotics.	LAFS.1112.W.3.7 LAFS.1112.SL.1.1B LAFS.1112.SL.2.4	
	43.04 Creatively demonstrate one of the pathways through which bacterial cells transfer genes.	LAFS.1112.W.3.7 LAFS.1112.W.2.4	
	43.05 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	
44.0	Investigate 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
	44.01 Distinguish the properties of sound waves; including frequency and amplitude.	LAFS.1112.W.2.4 MAFS.912.F-TF.2.7	
	44.02 Apply knowledge of the structures of the ear to create a model of an ear.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.G-GMD.2.4	
	44.03 Identify and perform tests in which hearing loss can be evaluated.	LAFS.1112.W.2.4	
	44.04 Research the variety of interventions and services available to aide those with hearing loss.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	44.05 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	
45.0	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
	45.01 Explain how vaccines act as medical interventions to defend the body against infectious invaders.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
	45.02 Explore the some of the various laboratory methods in which vaccines are produced.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
	45.03 Define plasmids and explain their significance in genetic engineering.	LAFS.1112.W.2.4 LAFS.1112.L.3.6,	
	45.04 Investigate the importance of epidemiologists and the impact these medical professionals have on public health.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8	
	45.05 Describe in general how vaccines interact with the human immune system.	LAFS.1112.W.2.4	
	45.06 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	
	45.07 Explore vaccination from the perspective of individuals from different generations.	LAFS.1112.W.2.4 LAFS.1112.SL.1.1A	
46.0	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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.N.1.6
46.01 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
46.02 Explain how genetic counseling can positively affect persons who have had genetic testing for various situations.	LAFS.1112.RI.1.1 LAFS.1112.W.3.7 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
46.03 Amplify a segment of DNA in the laboratory using the Polymerase Chain Reaction (PCR) procedure.		
46.04 Use laboratory techniques such as DNA extraction, PCR, and restriction analysis to identify single base pair differences in DNA.		
46.05 Apply laboratory results to demonstrate the relationship between genotype and phenotype.	LAFS.1112.W.2.4 MAFS.912.S-IC.1.2	HE.912.C.1.7
46.06 Analyze prenatal genetic screening results.	LAFS.1112.W.2.4	HE.912.C.1.7
46.07 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	
46.08 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	
47.0 Examine the current reproductive technology and discuss medical interventions of the future.–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 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
47.01 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
47.02 Discuss and debate the safety and effectiveness of gene therapy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.1.2	
47.03 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	
47.04 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	
47.05 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	
48.0 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
48.01 Investigate the physiology of cancer and discuss how cancerous cells differ from normal/healthy cells.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	HE.912.C.1.5
48.02 Describe some of the different uses of x-rays, CT scans, and MRI scans.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
48.03 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	
48.04 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	
49.0 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
49.01 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
49.02 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
49.03 Investigate viruses as a risk factor or cause for certain cancers.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 MAFS.912.S-MD.2.7	
50.0 Investigate the treatments and therapies available to treat cancer and its physical, mental and emotional effects.–The student will be able to:		SC.912.L.16.8 SC.912.N.1.1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		SC.912.N.4.2 SC.912.P.8.6 SC.912.P.8.7
50.01 Define and 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
50.02 Describe in general how chemotherapy drugs interact with and destroy cancer cells.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	HE.912.C.1.5
50.03 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	
50.04 Exhibit information on the advances and benefits of 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	
50.05 Explain how physical and occupational therapists help patients with disabilities or recovering from surgery/injury.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.W.3.8 LAFS.1112.W.1.2	
51.0 Explore the future of 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
51.01 Discuss some of the many 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	
51.02 Explain how SNP profiles factor into the decision to prescribe a specific medication.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
51.03 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	
51.04 Research and present how cases of human 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	
51.05 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	
52.0 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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
		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
52.01 Discuss how the diagnosis and treatment of diabetes has evolved from the 1800s through today.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.2	
52.02 Explain the specific bacterial transformation process that they perform.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
52.03 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	
52.04 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	
52.05 Explore and reflect on 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	
53.0 Investigate the causes and treatments for 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 SC.912.L.14.52
53.01 Describe End Stage Renal Disease (ESRD) and how it is diagnosed.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
53.02 Describe the chain of events that result when kidneys do not function properly and how it affects the creation of red blood cells.	LAFS.1112.W.2.4 LAFS.1112.W.3.7 LAFS.1112.RI.1.1	
53.03 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
54.0 Explore the process, policies and procedures involved for organ transplantation–The student will be able to:		SC.912.L.14.34 SC.912.L.14.35

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
54.01	Consider the integral factors to consider when deciding who should receive an organ transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
54.02	Describe the importance of blood and tissue typing for a successful organ transplant.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
54.03	Describe the general steps involved in a live donor laparoscopic nephrectomy.	LAFS.1112.W.2.4 LAFS.1112.W.3.7	
54.04	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	
54.05	Explain the most common ways members of the surgical transplant team work together for a successful transplant.	LAFS.1112.W.2.4 LAFS.1112.SL.1.1	
55.0	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 SC.912.N.4.2
55.01	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	
55.02	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	
55.03	Reflect on how current methods of medical intervention can be improved.	LAFS.1112.W.2.4	
55.04	Describe how advancing medical knowledge and technology will enable scientists to enhance the human body.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
55.05 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

Florida Standards			Correlation to CTE Program Standard #
39.0	Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Biomedical Sciences.		
	39.01	Key Ideas and Details	
	39.01.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
	39.01.2	Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
	39.01.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
	39.02	Craft and Structure	
	39.02.1	Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
	39.02.2	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
	39.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important	

Florida Standards	Correlation to CTE Program Standard #
issues that remain unresolved. LAFS.1112.RST.2.6	
39.03 Integration of Knowledge and Ideas	
39.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
39.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
39.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
39.04 Range of Reading and Level of Text Complexity	
39.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
39.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
40.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Biomedical Sciences.	
40.01 Text Types and Purposes	
40.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
40.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
40.02 Production and Distribution of Writing	
40.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
40.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.1112.WHST.2.5	
	40.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
		LAFS.1112.WHST.2.6	
40.03	Research to Build and Present Knowledge		
	40.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
		LAFS.1112.WHST.3.7	
	40.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	
		LAFS.1112.WHST.3.8	
	40.03.3	Draw evidence from informational texts to support analysis, reflection, and research.	
		LAFS.1112.WHST.3.9	
40.04	Range of Writing		
	40.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
		LAFS.1112.WHST.4.10	
41.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Biomedical Sciences.		
41.01	Make sense of problems and persevere in solving them.		
		MAFS.K12.MP.1.1	
41.02	Reason abstractly and quantitatively.		
		MAFS.K12.MP.2.1	
41.03	Construct viable arguments and critique the reasoning of others.		
		MAFS.K12.MP.3.1	
41.04	Model with mathematics.		
		MAFS.K12.MP.4.1	
41.05	Use appropriate tools strategically.		
		MAFS.K12.MP.5.1	
41.06	Attend to precision.		

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.6.1	
41.07 Look for and make use of structure.	MAFS.K12.MP.7.1	
41.08 Look for and express regularity in repeated reasoning.	MAFS.K12.MP.8.1	

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
56.0 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
56.01 Evaluate the significant 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
56.02 Analyze website content and assess overall credibility of the information.	LAFS.1112.W.2.6	
56.03 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	
56.04 Using brainstorming and problem solving skills propose solutions to healthcare delivery problems in the 21st century.	LAFS.1112.W.3.8 LAFS.1112.RI.1.1 LAFS.1112.SL.1.1B	
56.05 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	
56.06 Demonstrate proficiency in using online search engines and journal databases to locate reliable scientific articles.	LAFS.1112.W.2.6	
57.0 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
57.01 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
	57.02 Using knowledge of specified statistical analysis methods, analyze the results of experimental studies.	LAFS.1112.RI.1.1 LAFS.1112.W.3.7 MAFS.912.S-IC.1.2 MAFS.912.S-MD.2.7	
	57.03 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	
	57.04 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	
	57.05 Reflect on the various biomedical career fields related to clinical or research studies and describe two of these career fields.	LAFS.1112.W.3.1A,E LAFS.1112.W.3.7 LAFS.1112.L.3.4	
58.0	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
	58.01 Investigate the evolution of biomedical products.	LAFS.1112.W.3.7	
	58.02 Brainstorm ideas for a new biomedical product or methods to improve on an existing product.	LAFS.1112.W.3.7	
	58.03 Discuss the concept of design process and how it is significant to medical innovation.	LAFS.1112.SL.1.1	
	58.04 Choose a problem to solve, and then 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	
	58.05 Examine possible design solutions to the problem chosen, select the best approach and develop a design proposal.	LAFS.1112.W.4.10 LAFS.1112.L.3.4	
	58.06 Design a marketing plan to pitch the chosen solution to potential investors.	LAFS.1112.SL.2.4 LAFS.1112.W.1.2F	
59.0	Explore biomedical innovation through investigating water contamination.–The student will be able to:		SC.912.L.14.6 SC.912.L.14.52 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

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
		SC.912.N.1.6
59.01 List and describe multiple causes of water contamination.	LAFS.1112.SL.1.1 LAFS.1112.L.3.4	
59.02 Explain why water quality is a global issue.	LAFS.1112.SL.1.1 LAFS.1112.W.4.10	HE.912.C.1.3
59.03 Extrapolate on the cause of non-point source pollution and its implications.	LAFS.1112.W.3.7 LAFS.1112.W.4.10	
59.04 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	
59.05 Research and propose solutions to prevent or treat water contamination.	LAFS.1112.W.3.8 LAFS.1112.RI.2.4	
59.06 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
59.07 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
60.0 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
60.01 Discuss the significant role that epidemiologists and public health investigators play in a public health crisis or disease outbreak.	LAFS.1112.W.1.3A, E LAFS.1112.W.3.7 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	HE.912.C.1.5
60.02 Describe how to set-up case control and cohort studies.	LAFS.1112.W.2.4	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
60.03	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
60.04	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	
60.05	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	
60.06	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	
60.07	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
60.08	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	
60.09	Present and defend the proposed intervention plan to a professional audience.	LAFS.1112.SL.2.4	
61.0	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
61.01	Define and elaborate on what medical research is used for and how funding for it is obtained.	LAFS.1112.W.3.7	
61.02	Explain the role of a grant in relation to medical research.	LAFS.1112.SL.1.1 LAFS.1112.W.3.7	
61.03	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	
61.04	Distinguished between primary and secondary sources.	LAFS.1112.W.3.7	
61.05	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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
	MAFS.912.S-IC.2.6	
61.06 Discuss the role of an IRB in ensuring safety of a research project prior to data initiation.		
61.07 Understand and identify the process by which a grant is created and the principle components that are present 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	
61.08 Prepare, write 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	
62.0 (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
62.01 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	
62.02 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	
62.03 Interpret plasmid maps to determine the results of specific digestions with restriction enzymes.	LAFS.1112.W.1.2F	
62.04 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	
62.05 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 MAFS.912.N-Q.1.1	
62.06 Using the process of bacterial transformation, insert a new plasmid into bacterial cells.	LAFS.1112.W.3.9 LAFS.1112.RI.3.7	
62.07 Draw and label possible ligation products and describe digestion results for each product.	LAFS.1112.SL.1.1 LAFS.1112.W.2.4	
63.0 (Optional) Assuming the role of a medical expert, investigate a mysterious death using		SC.912.N.1.1

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci/HE
forensics autopsy techniques.–The student will be able to:			
	63.01 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	
	63.02 Evaluate a fetal pig for any abnormalities that may have led to the pig's death.		
	63.03 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	
	63.04 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	
	63.05 Design a fictitious death scenario using knowledge of the human body.	LAFS.1112.W.1.2	
	63.06 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	
	63.07 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	
64.0	(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
	64.01 Choose a topic and describe work previously completed pertaining to that topic.	LAFS.1112.W.3.8 LAFS.1112.L.3.4	
	64.02 Interpret charts, graphs, data sets and any other information related to the project.	LAFS.1112.W.1.2F	
	64.03 Utilize time and project management skills to complete the approved project in the time allotted.		
	64.04 Apply skills and knowledge of researching a topic, evaluating information and decision making in order to complete the project.		
	64.05 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 LAFS.1112.SL.2.4	
	64.06 Create a final product related to the project.	LAFS.1112.W.1.2F	
	64.07 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci/HE
64.08 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

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Course Title:　　**Introduction to Health Science**
Course Type:　　**Orientation/Exploratory**
Career Cluster:　　**Health Science**

Secondary – Middle School	
Program Number	8709350
CIP Number	148709350M
Grade Level	6-8
Standard Length	Semester
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list)
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Health Science career cluster.

The content includes but is not limited to a broad overview of the Health Science career cluster, including terminology, careers, history, required skills, and technologies associated with each pathway in the Health Science career cluster.

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.

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 the Therapeutic Services career pathway.
02.0   Demonstrate an understanding of the Diagnostics Services career pathway.
03.0   Demonstrate an understanding of the Health Informatics career pathway.
04.0   Demonstrate an understanding of the Support Services career pathway.
05.0   Demonstrate an understanding of the Biotechnology Research and Development career pathway.
06.0   Apply leadership and communication skills.
07.0   Describe how information technology is used in the Health Science career cluster.
08.0   Use information technology tools.

Florida Department of Education
Student Performance Standards

Course Title: **Introduction to Health Science**
Course Number: **8709350**
Course Length: **Semester**

Course Description:

Beginning with a broad overview of the Health Science career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Health Science career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks
01.0 Demonstrate an understanding of the Therapeutic Services career pathway--The student will be able to:
01.01 Define and use proper terminology associated with the Therapeutic Services career pathway.
01.02 Describe some of the careers available in the Therapeutic Services career pathway.
01.03 Identify common characteristics of the careers in the Therapeutic Services career pathway.
01.04 Research the history of the Therapeutic Services career pathway and describe how the associated careers have evolved and impacted society.
01.05 Identify skills required to successfully enter any career in the Therapeutic Services career pathway.
01.06 Describe technologies associated in careers within the Therapeutic Services career pathway.
02.0 Demonstrate an understanding of the Diagnostic Services career pathway--The student will be able to:
02.01 Define and use proper terminology associated with the Diagnostic Services career pathway.
02.02 Describe some of the careers available in the Diagnostic Services career pathway.
02.03 Identify common characteristics of the careers in the Diagnostic Services career pathway.
02.04 Research the history of the Diagnostic Services career pathway and describe how the careers have evolved and impacted society.
02.05 Identify skills required to successfully enter any career in the Diagnostic Services career pathway.
02.06 Describe technologies associated in careers within the Diagnostic Services career pathway.

CTE Standards and Benchmarks
03.0 Demonstrate an understanding of the Health Informatics career pathway--The student will be able to:
03.01 Define and use proper terminology associated with the Health Informatics career pathway.
03.02 Describe some of the careers available in the Health Informatics career pathway.
03.03 Identify common characteristics of the careers in the Health Informatics career pathway.
03.04 Research the history of the Health Informatics career pathway and describe how the careers have evolved and impacted society.
03.05 Identify skills required to successfully enter any career in the Health Informatics career pathway.
03.06 Describe technologies associated in careers within the Health Informatics career pathway.
04.0 Demonstrate an understanding of the Support Services career pathway--The student will be able to:
04.01 Define and use proper terminology associated with the Support Services career pathway.
04.02 Describe some of the careers available in the Support Services career pathway.
04.03 Identify common characteristics of the careers in the Support Services career pathway.
04.04 Research the history of the Support Services career pathway and describe how the careers have evolved and impacted society.
04.05 Identify skills required to successfully enter any career in the Support Services career pathway.
04.06 Describe technologies associated in careers within the Support Services career pathway.
05.0 Demonstrate an understanding of the Biotechnology Research and Development career pathway--The student will be able to:
05.01 Define and use proper terminology associated with the Biotechnology Research and Development career pathway.
05.02 Describe some of the careers available in the Biotechnology Research and Development career pathway.
05.03 Identify common characteristics of the careers in the Biotechnology Research and Development career pathway.
05.04 Research the history of the Biotechnology Research and Development career pathway and describe how the careers have evolved and impacted society.
05.05 Identify skills required to successfully enter any career in the Biotechnology Research and Development career pathway.
05.06 Describe technologies associated in careers within the Biotechnology Research and Development career pathway.
06.0 Apply leadership and communication skills--The student will be able to:

CTE Standards and Benchmarks	
06.01	Discuss the establishment and history of the HOSA organization.
06.02	Identify the characteristics and responsibilities of organizational leaders.
06.03	Demonstrate parliamentary procedure skills during a meeting.
06.04	Participate on a committee which has an assigned task and report to the class.
06.05	Demonstrate effective communication skills through delivery of a speech, a slide presentation, or conducting a demonstration.
06.06	Use a computer to assist in the completion of a project related to the Health Science career cluster.
07.0	Describe how information technology is used in the Health Science career cluster–The student will be able to:
07.01	Identify information technology (IT) careers in the Health Science career cluster, including the responsibilities, tasks and skills they require.
07.02	Relate information technology project management concepts and terms to careers in the Health Science career cluster.
07.03	Manage information technology components typically used in professions of the Health Science career cluster.
07.04	Identify security-related ethical and legal IT issues faced by professionals in the Health Science career cluster.
08.0	Use information technology tools–The student will be able to:
08.01	Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Health Science career cluster.
08.02	Use e-mail clients to send simple messages and files to other Internet users.
08.03	Demonstrate ways to communicate effectively using Internet technology.
08.04	Use different types of web search engines effectively to locate information relevant to the Health Science career cluster.

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 length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Course Title: **Introduction to Health Science and Career Planning**
Course Type: **Orientation/Exploratory**
Career Cluster: **Health Science**

Secondary – Middle School	
Program Number	8709360
CIP Number	148709360M
Grade Level	6-8
Standard Length	Semester
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list)
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Health Science career cluster.

The content includes but is not limited to a broad overview of the Health Science career cluster, including terminology, careers, history, required skills, and technologies associated with each pathway in the Health Science career cluster.

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.

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 the Therapeutic Services career pathway.
02.0   Demonstrate an understanding of the Diagnostics Services career pathway.
03.0   Demonstrate an understanding of the Health Informatics career pathway.
04.0   Demonstrate an understanding of the Support Services career pathway.
05.0   Demonstrate an understanding of the Biotechnology Research and Development career pathway.
06.0   Apply leadership and communication skills.
07.0   Describe how information technology is used in the Health Science career cluster.
08.0   Use information technology tools.

      Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes.

09.0   Describe the influences that societal, economic, and technological changes have on employment trends and future training.
10.0   Develop skills to locate, evaluate, and interpret career information.
11.0   Identify and demonstrate processes for making short and long term goals.
12.0   Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
13.0   Understand the relationship between educational achievement and career choices/postsecondary options.
14.0   Identify a career cluster and related pathways through an interest assessment that match career and education goals.
15.0   Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.
16.0   Demonstrate knowledge of technology and its application in career fields/clusters.

Florida Department of Education
Student Performance Standards

Course Title: **Introduction to Health Science**
Course Number: **8709350**
Course Length: **Semester**

Course Description:

Beginning with a broad overview of the Health Science career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Health Science career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks
01.0 Demonstrate an understanding of the Therapeutic Services career pathway--The student will be able to:
01.01 Define and use proper terminology associated with the Therapeutic Services career pathway.
01.02 Describe some of the careers available in the Therapeutic Services career pathway.
01.03 Identify common characteristics of the careers in the Therapeutic Services career pathway.
01.04 Research the history of the Therapeutic Services career pathway and describe how the associated careers have evolved and impacted society.
01.05 Identify skills required to successfully enter any career in the Therapeutic Services career pathway.
01.06 Describe technologies associated in careers within the Therapeutic Services career pathway.
02.0 Demonstrate an understanding of the Diagnostic Services career pathway--The student will be able to:
02.01 Define and use proper terminology associated with the Diagnostic Services career pathway.
02.02 Describe some of the careers available in the Diagnostic Services career pathway.
02.03 Identify common characteristics of the careers in the Diagnostic Services career pathway.
02.04 Research the history of the Diagnostic Services career pathway and describe how the careers have evolved and impacted society.
02.05 Identify skills required to successfully enter any career in the Diagnostic Services career pathway.
02.06 Describe technologies associated in careers within the Diagnostic Services career pathway.

03.0	Demonstrate an understanding of the Health Informatics career pathway--The student will be able to:	
	03.01	Define and use proper terminology associated with the Health Informatics career pathway.
	03.02	Describe some of the careers available in the Health Informatics career pathway.
	03.03	Identify common characteristics of the careers in the Health Informatics career pathway.
	03.04	Research the history of the Health Informatics career pathway and describe how the careers have evolved and impacted society.
	03.05	Identify skills required to successfully enter any career in the Health Informatics career pathway.
	03.06	Describe technologies associated in careers within the Health Informatics career pathway.
04.0	Demonstrate an understanding of the Support Services career pathway--The student will be able to:	
	04.01	Define and use proper terminology associated with the Support Services career pathway.
	04.02	Describe some of the careers available in the Support Services career pathway.
	04.03	Identify common characteristics of the careers in the Support Services career pathway.
	04.04	Research the history of the Support Services career pathway and describe how the careers have evolved and impacted society.
	04.05	Identify skills required to successfully enter any career in the Support Services career pathway.
	04.06	Describe technologies associated in careers within the Support Services career pathway.
05.0	Demonstrate an understanding of the Biotechnology Research and Development career pathway--The student will be able to:	
	05.01	Define and use proper terminology associated with the Biotechnology Research and Development career pathway.
	05.02	Describe some of the careers available in the Biotechnology Research and Development career pathway.
	05.03	Identify common characteristics of the careers in the Biotechnology Research and Development career pathway.
	05.04	Research the history of the Biotechnology Research and Development career pathway and describe how the careers have evolved and impacted society.
	05.05	Identify skills required to successfully enter any career in the Biotechnology Research and Development career pathway.
	05.06	Describe technologies associated in careers within the Biotechnology Research and Development career pathway.
06.0	Apply leadership and communication skills--The student will be able to:	
	06.01	Discuss the establishment and history of the HOSA organization.

	06.02	Identify the characteristics and responsibilities of organizational leaders.
	06.03	Demonstrate parliamentary procedure skills during a meeting.
	06.04	Participate on a committee which has an assigned task and report to the class.
	06.05	Demonstrate effective communication skills through delivery of a speech, a slide presentation, or conducting a demonstration.
	06.06	Use a computer to assist in the completion of a project related to the Health Science career cluster.
07.0	Describe how information technology is used in the Health Science career cluster–The student will be able to:	
	07.01	Identify information technology (IT) careers in the Health Science career cluster, including the responsibilities, tasks and skills they require.
	07.02	Relate information technology project management concepts and terms to careers in the Health Science career cluster.
	07.03	Manage information technology components typically used in professions of the Health Science career cluster.
	07.04	Identify security-related ethical and legal IT issues faced by professionals in the Health Science career cluster.
08.0	Use information technology tools–The student will be able to:	
	08.01	Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Health Science career cluster.
	08.02	Use e-mail clients to send simple messages and files to other Internet users.
	08.03	Demonstrate ways to communicate effectively using Internet technology.
	08.04	Use different types of web search engines effectively to locate information relevant to the Health Science career cluster.
Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes--The student will be able to:		
09.0	Describe the influences that societal, economic, and technological changes have on employment trends and future training.	
10.0	Develop skills to locate, evaluate, and interpret career information.	
11.0	Identify and demonstrate processes for making short and long term goals.	
12.0	Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.	
13.0	Understand the relationship between educational achievement and career choices/postsecondary options.	
14.0	Identify a career cluster and related pathways through an interest assessment that match career and education goals.	
15.0	Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.	
16.0	Demonstrate knowledge of technology and its application in career fields/clusters.	

Additional Information

Laboratory Activities

Laboratory activities are an integral part of this program. 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.

Special Notes

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

Career Planning

The requirements of section 1003.4156 (1) (e), Florida Statutes, have been integrated into this course. The statute requires that students take a career and education planning course that must result in a completed personalized academic and career plan for the student; must emphasize the importance of entrepreneurship skills; must emphasize technology or the application of technology in career fields; and, beginning in the 2014-2015 academic year, must provide information from the Department of Economic Opportunity's economic security report as described in section 445.07, Florida Statutes. For additional information on the Middle School Career and Education Planning course requirements, go to http://www.fldoe.org/workforce/ced/.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

**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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Funeral Services AS degree program (1312030100).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as Funeral Directors SOC Code 39-4031 Morticians, Undertakers, and Funeral Directors or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to mortuary administration, funeral law, public health and sanitation, stress management, employability skills, leadership and human relations skills, and health and safety.

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

Standards

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

01.0   Take care of the dead in a manner which recognizes the inherent dignity of human-kind.
02.0   Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure.
03.0   Interpret and communicate the purposes, procedures, and values of funeral services.
04.0   Counsel people regarding funeralization.
05.0   Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served.
06.0   Identify and comply with the laws pertaining to funeral service practice and public health.

Florida Department of Education
Student Performance Standards

Program Title: Florida Funeral Director
CIP Number: 0312030102
Program Length: 31 credit hours
SOC Code(s): 39-4031

This certificate program is part of the Funeral Services AS degree program (1312030100). At the completion of this program, the student will be able to:
01.0 Take care of the dead in a manner which recognizes the inherent dignity of human-kind–The student will be able to:
01.01 Give evidence of respect for human remains.
01.02 Demonstrate acceptance of racial and cultural diversity.
02.0 Identify the privileges of and be able to, through professional practices, fulfill the responsibilities of licensure–The student will be able to:
02.01 Identify the privileges and their limitations accorded the licensee with regard to caring for the dead, and serving the living.
02.02 Identify the responsibilities of the funeral director to those who have called him with regard to:
02.02.01 Providing services and merchandise as selected.
02.02.02 Explaining the financial aspects of the funeral, and pricing method used.
02.02.03 Explaining death benefits and/or burial allowances.
02.02.04 Notifying the clergy of the death, if appropriate.
02.02.05 Coordinating with the clergy on religious aspects of the funeral.
02.02.06 Explaining merchandise and related representations regarding final disposition.
02.02.07 Preparing a Statement of Goods and Services Selected pertaining to services, selected merchandise, supplemental items and cash advances.
02.02.08 Explaining applicable laws, rules and regulations.
02.02.09 Referring families for professional counseling as appropriate.
02.03 Identify the responsibilities of the funeral director to the profession with regard to:

	02.03.01	Costs, procedures, and communication when transferring human remains to another funeral establishment.	
	02.03.02	Public education regarding funeralization.	
02.04	Identify the responsibilities of the funeral director to the clergy in the matter of the policies, rules and regulations of religious organizations.		
02.05	Perform the following tasks applicable to the state in which he/she intends to gain a license:		
	02.05.01	State the limitations placed upon the practice of the funeral director/embalmer.	
	02.05.02	Summarize the law, rules and regulations pertaining to:	
		02.05.02.01	The transportation of the dead.
		02.05.02.02	Requirements and specifications of the funeral home, including the preparation room.
		02.05.02.03	Define terms specified in the license laws, rules and regulations.
		02.05.02.04	Identify the qualifications required of applicants for funeral director/mortician license.
		02.05.02.05	Identify the grounds for issuance, revocation, suspension or refusal to renew or issue licenses.
		02.05.02.06	Identify requirements for the conducting of funerals.
		02.05.02.07	Identify the procedures for filing a complaint concerning a violation of the licensing law.
		02.05.02.08	Identify provisions regarding reciprocity, endorsement and emergency licensing.
03.0	Interpret and communicate the purposes, procedures, and values of funeral services–The student will be able to:		
03.01	Identify the purposes which the funeral serves for the family, friends, church, occupational associates, and community of the deceased.		
03.02	Identify the values of the funeral.		
03.03	Define common terms used in funeral services.		
03.04	Identify the psychological purposes and values of the funeral.		
03.05	Identify the sociological purposes and values of the funeral.		
03.06	Organize and be prepared to discuss the purposes and values of the funeral.		
03.07	Identify the philosophical purposes and values of funeral service.		
04.0	Counsel people regarding funeralization–The student will be able to:		

04.01	Identify the major financial considerations that confront a bereaved family.	
04.02	Identify the times or situations during which a funeral director will make use of counseling.	
04.03	State the areas of counseling normally covered during funeralizations.	
04.04	Describe the process of funeralization.	
04.05	Describe contemporary opinions regarding psychology of death, grief, and bereavement.	
04.06	Describe how the manner and cause of death affects the psychological needs of the bereaved.	
04.07	List the information of importance to obtain during each type of counseling situation.	
04.08	Identify and appraise the basic personal and personality problems that may appear during counseling situations.	
04.09	Classify and analyze the various forms of funeral rites.	
04.10	Describe contemporary opinions regarding sociology of death, grief, and bereavement.	
04.11	Describe three or more types of counseling techniques applicable to funeral services and give reasons for the use of each in individual circumstances.	
04.12	Describe recent developments pertaining to the theologies of death, grief and bereavement.	
04.13	Describe the effects of the Uniform Anatomical Gift Act on funeralization.	
04.14	Identify and describe stages of dying.	
05.0	Plan, implement, and direct a funeral according to the sociological, psychological and theological needs of the person being served–The student will be able to:	
05.01	Develop a warm, friendly and tactful attitude towards the family at the first meeting.	
05.02	Identify the items of information which are necessary to complete the following forms:	
	05.02.01	Obituary
	05.02.02	Death certificate via the Electronic Death Registration System (EDRS)
	05.02.03	Social Security forms (SSA, 719, SSA 721)
	05.02.04	Veteran's forms (Marker, Flag, Burial Allowance)
	05.02.05	Burial/Transportation permits
	05.02.06	Release/Authorization forms

05.03	Identify the person(s) who are qualified to give permission for release of the deceased from a hospital, or to sign the hospital death record, if required.
05.04	Identify the information to be secured from, and given to, the family upon initial family contact.
05.05	Describe the multiple steps required between initial notification of death and removal of the deceased.
05.06	Identify person(s) who qualify to authorize autopsy and embalming, and to approve the purpose and disclosure statement.
05.07	Identify the items and considerations usually included in the arrangement conference.
05.08	Identify the types of death certificates and their uses.
05.09	Identify the appropriate times usually considered necessary to meet the funeral needs of those being served.
05.10	Identify the consideration normally involved in setting the order for the processional and recessional of a funeral service including casket, casket bearer, children, clergy, friends, fraternal orders, funeral directors, honorary bearers, next of kin, relatives and service organization.
05.11	Describe the multiple steps required between initial notification of death and removal of the deceased when the bereaved are not present at the time of death, regardless of the place or manner of death - including, but not limited to, the funeral director's determination of the need for a personal conference and/or counseling of the bereaved prior to the funeral arrangement conference.
05.12	Identify the items of clothing ordinarily required for the deceased.
05.13	Describe the proper techniques and equipment employed in the dignified removal of remains under diverse conditions.
05.14	Identify the reasons which require a discussion involving the family, the officiating clergyman, and the funeral director regarding visitation hours, time of funeral, and other aspects of the service.
05.15	Identify the purpose of the Burial-Transit Permit.
05.16	Write obituary and death notices.
05.17	Identify the purpose and content of pre-selection counseling.
05.18	Identify the participants functioning in funeral service and explain their duties.
05.19	Describe considerations involved in the dignified movement of casketed remains.
05.20	State considerations for determining the order of the funeral procession.
05.21	Coordinate a variety of committal rites when these are a part of a funeral.
05.22	Identify the psychological and sociological value of the funeral arrangement conference.
05.23	Identify methods of dealing with inter-personal conflicts among family members.
05.24	Discuss dismissal procedures for leaving the grave site.

	05.25	Explain the problems involved in harmonizing the colors of caskets in the funeral setting.
	05.26	Describe the various types of floral arrangements and the considerations involved in their placement.
	05.27	Identify requirement/procedure pertaining to cremation, calcination and burial at sea.
06.0	Identify and comply with the laws pertaining to funeral service practice and public health–The student will be able to:	
	06.01	Identify legally:
	06.01.01	The duty of the funeral director regarding the personal effects of a decedent.
	06.01.02	The basis of a funeral director's liability for the negligence of a volunteer driver in a funeral procession.
	06.01.03	The legal duty of a funeral director regarding permits required by law.
	06.01.04	The duty of the funeral director for compliance with the Federal Trade Commission Funeral Rules.
	06.01.05	The duty of the funeral director for compliance with the Magnuson-Moss Warranty Act (1975).
	06.01.06	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

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.

Although the proposed College Credit Certificate is not slated to be accredited by the American Board of Funeral Service Education (ABFSE), the intended outcomes are the same as their curricular objectives and the proposed certificate is aligned with Florida Statute.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Biotechnology 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 knowledge of the role of biotechnology in biomedicine, industry, agriculture and the environment.
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   Recognize and practice laboratory contamination and reagent control procedures
06.0   Demonstrate an understanding of information technology applications in biotechnology.
07.0   Demonstrate employability skills.
08.0   Demonstrate Collegiality and Team skills
09.0   Apply basic math and science skills.
10.0   Demonstrate communication skills.
11.0   Demonstrate safety skills.
12.0   Demonstrate basic laboratory skills.
13.0   Demonstrate regulatory compliance.
14.0   Demonstrate appropriate decision making and problem solving techniques.
15.0   Demonstrate specific laboratory skills.
16.0   Demonstrate quality assurance/control.
17.0   Maintain facility & equipment
18.0   Demonstrate an understanding of proper care/use of test animals/plants.

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 AS degree program (1326061600). At the completion of this program, the student will be able to:
01.0 Demonstrate knowledge of the role of biotechnology in biomedicine, industry, agriculture and the environment. – The student will be able to:
01.01 Identify the applications of biotechnology in academia, medicine and industry.
01.02 Recognize the different types of employment positions in biomedical, industrial, agricultural, and related biotechnology fields.
01.03 Describe the differences between academic research and biotechnology industrial applications.
01.04 Identify the different training skills need to work in the biotechnology industry.
01.05 Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on biotechnology.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01 Develop basic speaking and active listening skills.
02.02 Develop basic observational skills and related documentation strategies in written and oral form.
02.03 Identify characteristics of successful and unsuccessful communication including communication styles and barriers.
02.04 Respond to verbal and non-verbal cues.
02.05 Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.
02.06 Use appropriate scientific and medical terminology and abbreviations.
02.07 Recognize the importance of courtesy and respect for others and maintain good interpersonal relationships.
02.08 Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.

	02.09	Analyze elements of communication using a sender-receiver model.
	02.10	Distinguish between and report subjective and objective information.
	02.11	Report relevant information in order of occurrence.
03.0	Demonstrate legal and ethical responsibilities. – The student will be able to:	
	03.01	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.
	03.02	Demonstrate procedures for accurate documentation and record keeping.
	03.03	Differentiate between legal and ethical issues in research and industry.
	03.04	Describe a code of ethics consistent with research occupations.
	03.05	Identify and compare personal, professional, and organizational ethics.
04.0	Recognize and practice safety and security procedures. – The student will be able to:	
	04.01	Recognize safe and unsafe working conditions and report safety hazards.
	04.02	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).
	04.03	Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols and labels.
	04.04	Demonstrate proper body mechanics and ergonomics.
	04.05	Describe fire, safety, disaster and evacuation procedures.
	04.06	Discuss biohazard trash stream control.
	04.07	Demonstrate procedures for declaring a laboratory emergency and/or responding with appropriate institutional procedures.
05.0	Recognize and practice laboratory contamination and reagent control procedures. – The student will be able to:	
	05.01	Define principles of contamination control including standard and transmission based precautions.
	05.02	Demonstrate knowledge of asepsis and practice procedures such as hand-washing and isolation.
	05.03	Demonstrate knowledge of chemical cross-contamination control between reagents from weighing implements, storage containers and media.
	05.04	Describe how to dispose correctly of biohazardous materials according to appropriate government guidelines such as OSHA.
	05.05	Describe how to receive materials and recognize out-of-date or expired reagents.

06.0	Demonstrate an understanding of information technology applications in biotechnology. – The student will be able to:
06.01	Describe technology applications in biotechnology.
06.02	Define terms and demonstrate basic computer skills.
06.03	Recognize differences between primary scientific references and secondary information sources.
06.04	Identify methods of communication to access and distribute data such as fax, e-mail and internet.
07.0	Demonstrate employability skills. – The student will be able to:
07.01	Identify personal traits or attitudes desirable in a member of the team.
07.02	Exemplify basic professional standards of workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
07.03	Identify documents that may be required when applying for a job.
07.04	Write an appropriate resume.
07.05	Conduct a job search.
07.06	Complete a job application form correctly.
07.07	Recognize and examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.
07.08	Identify acceptable work habits.
07.09	Recognize appropriate affective/professional behavior.
07.10	Compare careers within the biotechnology industry, analytical testing and research science career pathways (bioinformatics, pharmacogenomics, testing and analytical services, diagnostic services, therapeutic services, health informatics, bioinformatics, formulation, support services or biotechnology research and development).
08.0	Demonstrate Collegiality and Team skills– The student will be able to:
08.01	Identify the general roles and responsibilities of the individual members of the team.
08.02	Identify characteristics of effective teams.
08.03	Recognize methods for building positive team relationships.
08.04	Analyze attributes and attitudes of an effective leader.
08.05	Recognize factors and situations that may lead to conflict.

	08.06	Demonstrate effective techniques for managing team conflict.
09.0	Apply basic math and science skills. – The student will be able to:	
	09.01	Draw, read, and report on graphs, charts and tables.
	09.02	Measure time, temperature, distance, capacity, and mass/weight.
	09.03	Make, use and convert using both traditional and metric units.
	09.04	Make estimations and approximations and judge the reasonableness of the result.
	09.05	Convert from regular to 24 hour time.
	09.06	Demonstrate ability to evaluate and draw conclusions.
	09.07	Organize and communicate the results obtained by observation and experimentation.
	09.08	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
	09.09	Calculate ratios
10.0	Demonstrate communication skills as related to biotechnology. – The student will be able to:	
	10.01	Make professional oral & written presentations.
	10.02	Comprehend and use correct technical vocabulary.
	10.03	Follow/analyze protocol.
	10.04	Keep accurate records.
	10.05	Take notes on procedures.
	10.06	Write or update SOP's protocols, reports and technical summaries.
	10.07	Perform computerized research and web searches.
	10.08	Perform basic applications in word processing, spread sheets, databases, presentations and project management.
	10.09	Navigate the internet.
11.0	Demonstrate safety skills. – The student will be able to:	
	11.01	Identify first aid supplies, co-worker contact, medical information, and emergency protection and evacuation plan.

	11.02	Follow correct safety procedures, guidelines and chemical hygiene plans.
	11.03	Maintain required safety training.
	11.04	Maintain a safe work area.
	11.05	Maintain and utilize safety equipment & personal protection equipment.
	11.06	Check expiration dates, lot numbers & labels for hazards.
	11.07	Monitor usage and exposure of biohazards.
	11.08	Handle, store and dispose of hazardous materials per MSDS, other safety guidelines & Worker Protection Standards (WPS).
	11.09	Follow standard precautions for biological pathogens.
	11.10	Store chemicals and biologicals according to storage guidelines.
12.0	Demonstrate basic laboratory skills. – The student will be able to:	
	12.01	Obtain and read protocol, test procedure, standard operating procedure (SOP) & proper forms.
	12.02	Prioritize & perform multiple tasks in a timely manner.
	12.03	Clean, organize and sterilize materials, when required.
	12.04	Check and maintain equipment, logs & perform preventative maintenance tasks according to schedule.
	12.05	Order inventory of supplies; date/label reagents.
	12.06	Practice aseptic technique.
	12.07	Use titration/pipetting techniques; measure volume/weights.
	12.08	Perform basic calculations and statistical analysis.
	12.09	Calculate and prepare dilutions series.
	12.10	Prepare solutions and reagents for laboratory use.
	12.11	Obtain and review appropriate procedures & test forms.
	12.12	Collect and set up samples for analysis.
	12.13	Set up general laboratory tests, including, setup equipment and instrumentation & perform/document tests and results.

13.0	Demonstrate regulatory compliance. – The student will be able to:	
	13.01	Accept state, local and industry regulations.
	13.02	Comply with principles using current Good Experimental Practices (GXP).
14.0	Demonstrate appropriate decision making and problem solving techniques. – The student will be able to:	
	14.01	Identify decision to be made and compare alternatives.
	14.02	Apply decision making skills in the workplace.
	14.03	Make decisions based on values and goals.
	14.04	Evaluate the decision made.
	14.05	Apply problem solving techniques in the workplace.
	14.06	Be sensitive to multicultural & nonsexist dimensions of problem solving.
15.0	Demonstrate specific laboratory skills. – The student will be able to:	
	15.01	Identify and quantify microorganisms and cells using manual & automated systems.
	15.02	Isolate, maintain & store pure cultures
	15.03	Harvest cells & recover effluent products.
	15.04	Decontaminate and/or dispose of equipment, glassware, biologicals.
	15.05	Perform microbiology skills, including but not limited to, plating techniques, isolating and characterizing cell lines.
	15.06	Perform immunological techniques, including but not limited to, enzyme-linked immunoabsorbent assays, use of monoclonal and polyclonal antibodies, and Western blot techniques.
	15.07	Perform genetic engineering and molecular biology techniques, including isolate & analyze nucleic acid isolation, polymerase chain reaction, and construct recombinant vectors.
	15.08	Perform additional specific skills, including but not limited to electrophoresis of RNA, DNA & proteins.
	15.09	Separate, isolate or characterize proteins, including but not limited to, monitoring protein stability, disrupt cells, protein gels, Western blotting, precipitate soluble proteins, concentrate (filter & dialyze) proteins, quantitative proteins, and enzyme activity assays.
	15.10	Perform chemical assays including measuring turbidity, viscosity, & density, quantitative analysis, distillation techniques, titration techniques, employing dyes and indicators, lypholization & organic chemistry techniques, and perform extractions
16.0	Demonstrate quality assurance/ control. – The student will be able to:	
	16.01	Perform quality tests and document results.

	16.02	Verify test standards and maintain QA records.
	16.03	Archive samples and documents.
17.0	Maintain facility & equipment. – The student will be able to:	
	17.01	Monitor/record the environmental condition of the facility refrigerators, freezers and incubators.
	17.02	Notify appropriate personnel if sampling indicates a problem.
	17.03	Clean work area according to SOPs.
	17.04	Label equipment.
	17.05	Check calibration & perform systems diagnostics
	17.06	Perform or schedule preventive maintenance.
	17.07	Maintain equipment logs.
	17.08	Demonstrate use of common tools including wrenches, pliers, and drivers used to maintain equipment and attach gear, such as gas cylinders and hoses.
18.0	Demonstrate an understanding of proper care/use of test animals/plants. – The student will be able to:	
	18.01	Explain the special requirements of receiving and transporting animals.
	18.02	Demonstrate knowledge of a vivarium.

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 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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Dental Assisting Technology and Management – ATD**
Program Type: **ATD (Applied Technology Diploma)**
Career Cluster: **Health Science**

	CC	PSAV
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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Reading: 10 Mathematics 10 Language: 10	

Purpose

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

PSAV 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
	DEA0727	Dental Assisting 1	465 hours	31-9091
C	DEA0728	Dental Assisting 2	465 hours	

*Students who have previously completed the Health Core (HSC0003) as part of this degree or the Dental Assisting Technology and Management-ATD are not required to take the Introduction to Dental Assisting module (standards 1-10) and should be given advanced standing in the program.

College Credit

When offered at the college 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**
PSAV Number: **H170113**

When this program is offered at the PSAV level, the following organization of courses, standards, and benchmarks apply.

Course Number: DEA0725 **Occupational Completion Point: A** **Introduction to Dental Assisting – 90 Hours – SOC Code 31-9099**	
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, a 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 relation

	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 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 worker
	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.
	04.05	Recognize the steps in the grief process.
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 Materials Data Safety Sheets (MSDS) 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 Bloodborne 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 operatory and laboratory equipment.
14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
14.03	Maintain dental operatory equipment and instruments.
14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.
14.05	Seat and dismiss patients
14.06	Operate oral evacuation devices and air/water syringe
14.07	Maintain a clear field of vision including isolation techniques
14.08	Perform a variety of instrument transfers
14.09	Utilize appropriate chairside assistant ergonomics
14.10	Implement appropriate patient safety goals as identified by The Joint Commission

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 Perform dark room/processing procedures, mix solutions.
	17.05 Describe the proper disposal of hazardous radiographic waste
	17.06 Place and expose dental radiographic films and digital sensors.
	17.07 Perform extraoral and carpal radiography as required for dental diagnostic procedures
	17.08 Identify radiographic anatomical landmarks and pathologies.
	17.09 Mount radiographic surveys.
	17.10 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.

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, a formatting and confidentiality and specific formats of letter
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, 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
	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.
	04.05	Recognize the steps in the grief process.
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 Materials Data Safety Sheets (MSDS) 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, workp 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 Bloodborne 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 operatory and laboratory equipment.
	14.02	Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.
	14.03	Maintain dental operatory equipment and instruments.
	14.04	Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.

	14.05	Seat and dismiss patients
	14.06	Operate oral evacuation devices and air/water syringe
	14.07	Maintain a clear field of vision including isolation techniques
	14.08	Perform a variety of instrument transfers
	14.09	Utilize appropriate chairside assistant ergonomics
	14.10	Implement appropriate patient safety goals as identified by The Joint Commission
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	Perform dark room/processing procedures, mix solutions.
	17.05	Describe the proper disposal of hazardous radiographic waste
	17.06	Place and expose dental radiographic films and digital sensors.
	17.07	Perform extraoral and carpal radiography as required for dental diagnostic procedures
	17.08	Identify radiographic anatomical landmarks and pathologies.
	17.09	Mount radiographic surveys.
	17.10	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.
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	Employ mentoring skills to inspire and teach others.
	20.11	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.

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 Council on Dental Accreditation are required to implement enrollment and admissions criteria that include 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.

Either a community college or school district may offer the ATD program. A community college may offer as either college credit or vocational credit. A vocational technical center may offer as vocational credit only. Students completing an ATD at a vocational technical center will be awarded the guaranteed college credit upon enrollment at the community college.

Minimum entrance requirements for this program includes a high school diploma or GED. Students must meet the minimum basic skills to complete this program.

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.

No fees will be charged for the transfer of credit from a technical center to a community college. The established statewide fee structure will be adhered to by both delivery systems.

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.

This program should meet the most current edition of the American Dental Association Accreditation Standards for Dental Assisting Education Programs (c.1992). For further information, contact: American Dental Association Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611. http://www.ada.org/prof/ed/accred/standards/index.asp

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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs 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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

**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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Identify the anatomic structure and function of body systems in relation to prosthetic services performed by the dental laboratory technician.
13.0   Practice quality assurance, safety and infection control.
14.0   Adhere to legal and ethical principles related to the practice of dental laboratory technology.
15.0   Demonstrate knowledge of effective business management techniques.
16.0   Demonstrate knowledge of dental sciences.
17.0   Perform basic dental laboratory techniques consistent with current dental laboratory practice.
18.0   Demonstrate knowledge, principles and methods of disease transmission and prevention.
19.0   Demonstrate skills necessary for marketing and sales of dental products.
20.0   Demonstrate knowledge of dental laboratory set up and management procedures.

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

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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

The AAS degree requires the inclusion of a minimum of 15 credits of general education coursework according to SACS. At the completion of this program, the student will be able to:
12.0   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:
12.01   Identify structures and functions of head and neck anatomy.
12.02   Identify embryonic development of head, oral cavity and individual teeth.
12.03   Identify each tooth and its landmarks.
13.0   Practice quality assurance, safety and infection control--The student will be able to:
13.01   Practice safety in accordance with institutional policy.
13.02   Identify documentation procedures necessary to comply with state laws.
13.03   Demonstrate knowledge of the dental laboratory technician's role in providing quality assurance in laboratory procedures, reporting, and use and maintenance of equipment.
13.04   Use appropriate dental terminology and abbreviations.
13.05   Demonstrate knowledge, principles, and methods of disease transmission and prevention as related to dental prostheses.
13.06   Demonstrate knowledge of infection control in dental laboratories in accordance with Center for Disease Control (CDC)/OSHA guidelines.

	13.07 Implement appropriate Joint Commission patient safety goals.
14.0	Adhere to legal and ethical principles related to the practice of dental laboratory technology--The student will be able to:
	14.01 Demonstrate knowledge of the importance of observing the doctor/technician relationship.
	14.02 Demonstrate knowledge of state law governing the practice of Dental Laboratory Technology.
15.0	Demonstrate knowledge of effective business management techniques--The student will be able to:
	15.01 Demonstrate knowledge and use of an office/laboratory procedure manual.
	15.02 Demonstrate knowledge of business finance and operating expenses.
	15.03 Demonstrate knowledge of a pay scale and benefit program for employees and a bookkeeping system.
	15.04 Demonstrate knowledge of tax forms, payroll records, insurance needs and inventory needs.
	15.05 Demonstrate knowledge of employee hiring orientation.
	15.06 Demonstrate knowledge of computer applications in the dental laboratory.
16.0	Demonstrate knowledge of dental sciences--The student will be able to:
	16.01 Demonstrate knowledge of physical properties, use and manipulation of dental materials.
	16.02 Demonstrate knowledge of the dynamics of occlusion.
	16.03 Demonstrate problem solving skills as related to dental materials.
17.0	Perform basic dental laboratory techniques consistent with current dental laboratory practice--The student will be able to:
	17.01 Manufacture complete denture prosthodontics.
	17.02 Manufacture removable partial denture prosthodontics.
	17.03 Manufacture fixed prosthodontics using metals, porcelain and composites.
	17.04 Manufacture finish, and polish pedodontic, orthodontic and preventive appliances.
	17.05 Manufacture special prostheses.
18.0	Demonstrate knowledge, principles, and methods of disease transmission and prevention--The student will be able to:
	18.01 Establish infection control in dental laboratories in accordance with Centers for Disease Control/OSHA guidelines.

	18.02 Establish an infection control procedures policy for the dental laboratory.
19.0	Demonstrate skills necessary for marketing and sales of dental products--The student will be able to:
	19.01 Demonstrate effective product evaluation and comparison.
	19.02 Identify appropriate consumer populations.
	19.03 Discuss dental product application and effectiveness.
	19.04 Demonstrate business management skills for record keeping related to marketing.
	19.05 Apply economic principles for product distribution and sales.
20.0	Demonstrate knowledge of dental laboratory set up and management procedures--The student will be able to:
	20.01 Design a dental laboratory and identify appropriate equipment.
	20.02 Establish quality control procedures.
	20.03 Set up and maintain business correspondence system.
	20.04 Establish a dental laboratory policy for maintenance of equipment.
	20.05 Set up a pay scale and benefit program for employees and a bookkeeping system.
	20.06 Develop an office/laboratory procedure manual.
21.0	Demonstrate skills necessary for marketing and sales of dental products--The student will be able to:
	21.01 Demonstrate effective product evaluation and comparison.
	21.02 Identify appropriate consumer populations.
	21.03 Discuss dental product application and effectiveness.
	21.04 Demonstrate business management skills for record keeping related to marketing.
	21.05 Apply economic principles for product distribution and sales.
22.0	Demonstrate knowledge of dental laboratory set up and management procedures--The student will be able to:
	22.01 Design a dental laboratory and identify appropriate equipment.
	22.02 Establish quality control procedures.

22.03	Set up and maintain business correspondence system.
22.04	Establish a dental laboratory policy for maintenance of equipment.
22.05	Set up a pay scale and benefit program for employees and a bookkeeping system.
22.06	Develop an office/laboratory procedure manual.

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, 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 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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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
15.0   Comply with accreditation standards of governmental or governmental appointed agencies/organization.

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 (1-9)
01.0 Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:
01.01 Identify the basic components of the health care delivery system including public, private, government and non-profit.
01.02 Identify common methods of payment for healthcare services.
01.03 Describe the composition and functions of a healthcare team.
01.04 Identify the general roles and responsibilities of the individual members of the healthcare team.
01.05 Identify the roles and responsibilities of the consumer within the healthcare delivery system.
01.06 Identify characteristics of effective teams.
01.07 Recognize methods for building positive team relationships.
01.08 Analyze attributes and attitudes of an effective leader.
01.09 Recognize factors and situations that may lead to conflict.
01.10 Demonstrate effective techniques for managing team conflict.
01.11 Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:
02.01 Develop fundamental speaking and active listening skills.
02.02 Develop essential observational skills.

	02.03	Understand documentation strategies in written and oral form.
	02.04	Identify communication styles and barriers.
	02.05	Understand characteristics of successful and unsuccessful communication
	02.06	Respond to verbal and non-verbal cues.
	02.07	Compose written communication for various purposes using correct spelling, grammar, formatting and confidentiality.
	02.08	Use appropriate medical terminology and abbreviations.
	02.09	Recognize the importance of maintaining good interpersonal relationships with patients and other healthcare workers
	02.10	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic generational and religious groups.
	02.11	Analyze elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
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	Demonstrate knowledge of the implementation processes of healthcare facility policy and procedures.
	03.03	Explain the "Patient's Bill of Rights".
	03.04	Identify standards of the Health insurance Portability and Accountability Act (HIPAA).
	03.05	Describe advance directives.
	03.06	Describe informed consent.
	03.07	Explain the laws governing harassment, labor and employment.
	03.08	Differentiate between legal and ethical issues in healthcare.
	03.09	Describe a code of ethics.
	03.10	Identify and compare personal, professional, and organizational ethics.
	03.11	Recognize the limits of authority and responsibility of health care workers including legislated scope of practice

	03.12	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 report safety hazards.
	04.02	Explain and apply the theory of root cause analysis
	04.03	Identify and describe most common medical errors and methods for medical error reduction and prevention in the various healthcare settings.
	04.04	Demonstrate personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions.
	04.05	Discuss The Joint commission National Patient Safety Goals (www.jointcommission.org)
	04.06	Demonstrate awareness of other institutional policies and procedures related safety and security.
05.0	**Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:**	
	05.01	Demonstrate computer skills including word processing, spreadsheets, presentations, and database management.
	05.02	Recognize technology applications in healthcare.
	05.03	Discuss methods of communication to access and distribute data such as fax, e-mail and internet.
	05.04	Interpret information from Electronic Health Records (EHR) and applications in healthcare.
	05.05	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
	05.06	Demonstrate how health information is used for institutional outcome assessment
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, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).
	06.03	Identify documents that may be required when applying for a job.
	06.04	Write an appropriate resume.
	06.05	Conduct a job search. including levels of education, credentialing requirements employment opportunities, workplace environments and career growth potential
	06.06	Complete a job application form correctly.
07.0	**Basic knowledge of medical language, anatomy and physiology, disease processes and pharmacology.**	

	07.01	Demonstrate knowledge of clinical terminology as relates to healthcare management.
	07.02	Describe the structure and function of different body systems.
	07.03	Demonstrate an understanding of the fundamentals of disease process in relationship to the human body, including pharmacology.
08.0		Demonstrate knowledge of materials and supplies needed to care in healthcare and how to obtain them in various healthcare settings. – The student will be able to:
	08.01	Evaluate current inventory.
	08.02	Prepare purchase orders, being mindful of current financial status of institution.
	08.03	Shop for quality, price, and quantity.
	08.04	Maintain computer-based inventory system.
	Health Services Management (9-15)	
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	Be knowledgeable in workflow identification, charting, and workflow management techniques such as PERT and GANNT charting.
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	Contrast 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.

12.0	**Demonstrate knowledge of appropriate human resource management in healthcare – The student will be able to:**
12.01	Prepare job descriptions.
12.02	Develop productivity standards required for total care using available statistics.
12.03	Identify factors that contribute to the development of productivity standards.
12.04	Demonstrate the understanding of the legal aspects of human resource management.

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 reimbursement systems and methodologies– The student will be able to:**
14.01	Demonstrate knowledge of a patient classification system within a health care facility.
14.02	Demonstrate understanding of process of utilization review for utilization review.
14.03	Demonstrate knowledge of accounts receivable system that monitors and optimizes reimbursement.
14.04	Evaluate acase-mix analysis reports.
14.05	Demonstrate the knowledge of third party reimbursements.
14.06	Demonstrate basic knowledge of the procedures and purposes of medical billing and coding.

15.0 Comply with accreditation standards of governmental or governmental appointed agencies/organization. –The student will be able to:
15.01 List and implement procedures to meet required standards for health care facilities.
15.02 Identify the required standards for health care personnel.
15.03 Identify policies and operational procedures to meet required standards.
15.04 Identify liaison mechanisms with appropriate accrediting organizations.
15.05 Discuss importance of maintaining state and federal licenses.
15.06 Access performance improvement activities.
15.07 Explain medical staff processes and protocols.
15.08 Identify risk management activities.
15.09 Identify CQI activities.

<center>**Additional Information**</center>

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

<u>Additional Resources</u>

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Medical Coder/Biller-ATD**
Program Type: **ATD (Applied Technology Diploma)**
Career Cluster: **Health Science**

NOTE: This program has been daggered for deletion with 2014-2015 being the last cohort of students permitted to enroll in the program. After 2014-2015, no new students may be enrolled in this program. Students already enrolled in the program may, at the District's discretion, continue taking courses in the program until completion. **Beginning in 2015-2016, new students should be enrolled in Medical Coder/Biller-ATD (NEW) H170530 / 0351070713.**

	CC	PSAV
Program Number	N/A	H170528
CIP Number	0351070705	0351070703
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	26 credit hours	1000 clock hours
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians 29-2099 Health Technologists and Technicians, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Mathematics 10 Reading: 11 Language: 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 technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV 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	HIM0071	Medical Coder/Biller 1	300 hours	29-2071
	HIM0072	Medical Coder/Biller 2	300 hours	
	HIM0073	Medical Coder/Biller 3	310 hours	

* Students who have taken the Health Core (HSC0003) previously as part of this program are not required to take HIM0009 to complete the program. These students should continue on to OCP B. Beginning in 2011-12 new students should be enrolled in HIM0009 as the first course in the program.

College Credit

When offered at the community college level, this ATD program is part of the Health Information Technology (1351070700) and has a program length of 26 credits.

Standards

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

01.0   Demonstrate an understanding of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Utilize appropriate health services organization and delivery system regulations.
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 CPT coding systems, both manual and automated.
17.0   Demonstrate proficiency in ICD coding complexities.
18.0   Explain the significance of health information services to the Medical Coder/Biller.
19.0   Demonstrate ethical and legal principles with regard to the use of medical records.
20.0   Demonstrate understanding of medical billing.

Florida Department of Education
Student Performance Standards

Program Title: **Medical Coder/Biller-ATD**
PSAV Number: **H170528**

When this program is offered at the PSAV level, the following organization of courses, standards, and benchmarks apply.

Course Number: HIM0009 **Occupational Completion Point: A** **Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099**	
01.0	Demonstrate an understanding of the healthcare delivery system 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 regulatory agencies and organizations within the healthcare delivery system
	01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
	02.01 Develop basic speaking and active listening skills.
	02.02 Develop basic observational skills and related documentation strategies in written and oral form.
	02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).

PSAV Course Number: HIM0071
Occupational Completion Point: B
Medical Coder/Biller 1 – 300 Hours – SOC Code 29-2071

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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	15.04	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
	15.05	Identify and use diagnostic test terminology.

Course Number: HIM0072
Occupational Completion Point: B
Medical Coder/Biller 2 – 300 Hours – SOC Code 29-2071

16.0	Demonstrate proficiency in use of ICD and CPT coding systems, both manual and automated–The student will be able to:	
	16.01	Outline the development of nomenclatures and classification systems.
	16.02	Identify conventions and guidelines used in coding.
	16.03	Describe the process to annually update coding resources.
	16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.
	16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
	16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
	16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
	16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
	16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
	16.10	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	Demonstrate proficiency in ICD coding complexities–The student will be able to:	
	17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
	17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
	17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
	17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
	17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
	17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
	17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
	17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.

18.0	Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:
	18.01 Describe origin, history and definition of all medical record types.
	18.02 Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03 Explain the classification and functions of health information management personnel and chain of command.
	18.04 State reasons medical records are important in the health care delivery system.
	18.05 Explain different filing systems used in health care institutions.
	18.06 Describe the development of the medical record to include all record types.
	18.07 Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08 Demonstrate the use of a master patient index (MPI) system.

Course Number: HIM0073
Occupational Completion Point: B
Medical Coder/Biller 3 – 310 Hours – SOC Code 29-2071

19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:
	19.01 Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02 Discuss the Code of Ethics of the American Health Information Management Association.
	19.03 Explain the scope of practice of the Medical Coder/Biller.
	19.04 Demonstrate ethical coding practices as outlined by AHIMA.
	19.05 Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:
	20.01 Demonstrate an understanding of the revenue cycle management processes.
	20.02 Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03 Compare and contrast various reimbursement entities.
	20.04 Identify sources of payment, including patient and third parties.
	20.05 Use medical billing software.

20.06	Perform electronic claims billing and submission.
20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
20.08	Analyze claims rejection, correct and resubmit for payment.
20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
20.10	Identify the various external regulating agencies and their impact on the coding systems.
20.11	Discuss chargemaster and superbill maintenance.
20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

Florida Department of Education
Student Performance Standards

Program Title: **Medical Coder/Biller-ATD**
ATD CIP Number: **0351070705**
SOC Code(s): **29-2071**

When this program is offered at the college level, the following standards and benchmarks apply:

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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01 Develop basic speaking and active listening skills.
02.02 Develop basic observational skills and related documentation strategies in written and oral form.
02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	115.03	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 CPT coding systems, both manual and automated–The student will be able to:	
	16.01	Outline the development of nomenclatures and classification systems.
	16.02	Identify conventions and guidelines used in coding.
	16.03	Describe the process to annually update coding resources.

	16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.
	16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
	16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
	16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
	16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
	16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
	16.10	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	Demonstrate proficiency in ICD coding complexities–The student will be able to:	
	17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
	17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
	17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
	17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
	17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
	17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
	17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
	17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.
18.0	Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:	
	18.01	Describe origin, history and definition of all medical record types.
	18.02	Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03	Explain the classification and functions of health information management personnel and chain of command.
	18.04	State reasons medical records are important in the health care delivery system.
	18.05	Explain different filing systems used in health care institutions.

	18.06	Describe the development of the medical record to include all record types.
	18.07	Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08	Demonstrate the use of a master patient index (MPI) system.
19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:	
	19.01	Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02	Discuss the Code of Ethics of the American Health Information Management Association.
	19.03	Explain the scope of practice of the Medical Coder/Biller.
	19.04	Demonstrate ethical coding practices as outlined by AHIMA.
	19.05	Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:	
	20.01	Demonstrate an understanding of the revenue cycle management processes.
	20.02	Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03	Compare and contrast various reimbursement entities.
	20.04	Identify sources of payment, including patient and third parties.
	20.05	Use medical billing software.
	20.06	Perform electronic claims billing and submission.
	20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
	20.08	Analyze claims rejection, correct and resubmit for payment.
	20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
	20.10	Identify the various external regulating agencies and their impact on the coding systems.
	20.11	Discuss chargemaster and superbill maintenance.
	20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

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 160th Street
Stilwell, KS 66085
800-499-9092
www.nhanow.com

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs 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 26 credits. When offered at a technical center the standard length of this program is 1000 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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Medical Record Transcribing/ Healthcare Documentation -ATD
Program Type: ATD (Applied Technology Diploma)
Career Cluster: Health Science

	CC	PSAV
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	
SOC Codes (all applicable)	29-2099 Health Technologists and Technicians, All Other 31-9094 Medical Transcriptionists	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Mathematics 10 Reading: 11 Language: 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 technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV 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	

* Students who have taken the Health core (HSC0003) previously as part of this program are not required to take HIM0009 to complete the program. These students should continue on to OCP B. Beginning in 2011-12 new students should be enrolled in HIM0009 as the first course in the program.

College Credit

When offered at the college 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 the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Utilize appropriate health services organization and delivery system regulations.
11.0   Demonstrate computer knowledge and skills.
12.0   Demonstrate employability skills.
13.0   Use 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   Practice safety and security specific of the medical transcriptionist/ healthcare documentation specialist.
19.0   Explain the role of health information services.
20.0   Demonstrate ethical and legal principles with regard to the use of healthcare documentation.

Florida Department of Education
Student Performance Standards

Program Title: **Medical Record Transcribing/ Healthcare Documentation -ATD**
PSAV Number: **H170508**

When this program is offered at the PSAV level, the following organization of courses, standards, and benchmarks apply.

Course Number: HIM0009 **Occupational Completion Point: A** **Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099**	
01.0	Demonstrate an understanding of the healthcare delivery system 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 regulatory agencies and organizations within the healthcare delivery system
	01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
	02.01 Develop basic speaking and active listening skills.
	02.02 Develop basic observational skills and related documentation strategies in written and oral form.
	02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).

Course Number: HIM0002
Occupational Completion Point: B
Medical Transcriber- ATD 1 – 370 Hours – SOC Code 31-9094

13.0	Use 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 Students will distinguish between or among medical homophones (soundalikes), 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 electrodiagnostic, imaging, laboratory, and pathology procedures 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 Categorize 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	Use medical dictionaries and specialty word books.
	16.02	Identify and use trade, generic and chemical drug names utilizing reference sources.
	16.03	Identify and use diagnostic test terminology.
	16.04	Access, use and evaluate the reliability of resources located on the internet.
Course Number: HIM0083 **Occupational Completion Point: B** **Medical Transcriber-ATD 2 – 370 Hours – SOC Code 31-9094**		
17.0	Apply healthcare documentation technology.–The student will be able to:	
	17.01	Demonstrate keyboarding skills with an awareness of productivity and accuracy standards and definitions.
	17.02	Demonstrate use of transcription technology.
	17.03	Discuss the use of commonly used dictation delivery and transcription technologies.
	17.04	Students will 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.
	17.05	Students will demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
	17.06	Students will recognize, evaluate, and call attention to inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
	17.07	Demonstrate the use of word processing programs, including commands for editing, file organization, and retrieval.
	17.08	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
	17.09	Demonstrate a general knowledge of speech recognition technology (SRT), its basic editing functions, and how it integrates into healthcare documentation.
	17.10	Demonstrate a general knowledge of electronic healthcare records (EHR) including the functions related to dictation/transcription integration and editing, and common terminology used in EHR systems.

18.0	Practice safety and security specific of the medical transcriptionist/ healthcare documentation specialist. –The student will be able to:	
	18.01	Follow 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.

Course Number: HIM0084
Occupational Completion Point: B
Medical Transcriber-ATD 3 – 370 Hours – SOC Code 31-9094

19.0	Explain the role of health information services–The student will be able to:	
	19.01	Understand the documentation workflow, will be able to explain the importance of delivering healthcare documentation in a timely manner, and apply this concept.
	19.02	Explain the use of the health record by state and federal regulatory and licensing agencies and accrediting bodies/agencies.
	19.03	Students will demonstrate an awareness of the opportunities in medical transcription/ healthcare documentation and related careers and the importance of professional development.
20.0	Demonstrate ethical and legal principles with regard to the use of healthcare documentation.–The student will be able to:	
	20.01	Explain the importance of maintaining ethical and legal standards in compiling and using healthcare documentation.
	20.02	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
	20.03	Explain medical record authentication and its legal implications.
	20.04	Explain the scope of practice of the medical transcriptionist/ healthcare documentation specialist.
	20.05	Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).
	20.06	Discuss the code of ethics of the American Health Information Management Association (AHIMA).
	20.07	Discuss Health Insurance Portability and Accountability Act (HIPAA) regulations as these regulations apply to healthcare documentation.

Florida Department of Education
Student Performance Standards

Program Title: Medical Record 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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including 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	Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.

	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	
	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.

	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	**Identify the importance of privacy and health records law in healthcare–The student will be able to:**	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	**Utilize appropriate health services organization and delivery system regulations. – The student will be able to:**	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	**Demonstrate computer knowledge and skills–The student will be able to:**	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.
	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.

	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
13.0	Use 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	Students will distinguish between or among medical homophones (soundalikes), 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 electrodiagnostic, imaging, laboratory, and pathology procedures 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	Categorize 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	Use medical dictionaries and specialty word books.
16.02	Identify and use trade, generic and chemical drug names utilizing reference sources.
16.03	Identify and use diagnostic test terminology.
16.04	Access, use and evaluate the reliability of 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 technology.
	17.03	Discuss the use of commonly used dictation delivery and transcription technologies.
	17.04	Students will 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.
	17.05	Students will demonstrate the ability to proofread and correct transcribed healthcare documents, including using critical thinking and editing skills.
	17.06	Students will recognize, evaluate, and call attention to inconsistencies, discrepancies, and inaccuracies in healthcare dictation while transcribing/editing, without altering the meaning of the content.
	17.07	Demonstrate the use of word processing programs, including commands for editing, file organization, and retrieval.
	17.08	Demonstrate knowledge of abbreviation expanders and other productivity-enhancing software.
	17.09	Demonstrate a general knowledge of speech recognition technology (SRT), its basic editing functions, and how it integrates into healthcare documentation.
	17.10	Demonstrate a general knowledge of electronic healthcare records (EHR) including the functions related to dictation/transcription integration and editing, and common terminology used in EHR systems.
18.0	Practice safety and security specific of the medical transcriptionist/ healthcare documentation specialist. –The student will be able to:	
	18.01	Follow 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.
19.0	Explain the role of health information services–The student will be able to:	
	19.01	Understand the documentation workflow, will be able to explain the importance of delivering healthcare documentation in a timely manner, and apply this concept.
	19.02	Explain the use of the health record by state and federal regulatory and licensing agencies and accrediting bodies/agencies.
	19.03	Students will demonstrate an awareness of the opportunities in medical transcription/ healthcare documentation and related careers and the importance of professional development.
20.0	Demonstrate ethical and legal principles with regard to the use of healthcare documentation.–The student will be able to:	
	20.01	Explain the importance of maintaining ethical and legal standards in compiling and using healthcare documentation.
	20.02	Explain the importance of maintaining workstation security and safeguarding protected health information (PHI).
	20.03	Explain medical record authentication and its legal implications.

20.04	Explain the scope of practice of the medical transcriptionist/ healthcare documentation specialist.
20.05	Discuss the code of ethics of the Association for Healthcare Documentation Integrity (AHDI).
20.06	Discuss the code of ethics of the American Health Information Management Association (AHIMA).
20.07	Discuss Health Insurance Portability and Accountability Act (HIPAA) regulations as these regulations apply to healthcare 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. Web site: http://www.ahdionline.org/ E-mail: ahdi@ahdionline.org

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs 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.

<u>Additional Resources</u>

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Medical Information Coder/Biller**
Career Cluster: **Health Science**

<mark>NOTE: This program has been daggered for deletion with 2014-2015 being the last cohort of students permitted to enroll in the program. <u>After 2014-2015, no new students may be enrolled in this program.</u> Students already enrolled in the program may, at the District's discretion, continue taking courses in the program until completion. **Beginning in 2015-2016, new students should be enrolled in Medical Information Coder/Biller (New)-CIP# 0351070714 .**</mark>

CCC	
CIP Number	0351070707
Program Type	College Credit Certificate (CCC)
Program Length	34 credit hours
CTSO	HOSA: Future Health Professionals; Phi Beta Lambda
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Health Information Technology AS degree program (1351070708).

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.

<u>**Standards**</u>

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

01.0   Demonstrate an understanding of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Utilize appropriate health services organization and delivery system regulations.
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 CPT coding systems, both manual and automated.
17.0   Demonstrate proficiency in ICD coding complexities.
18.0   Explain the significance of health information services to the Medical Coder/Biller.
19.0   Demonstrate ethical and legal principles with regard to the use of medical records.
20.0   Demonstrate understanding of medical billing.

**Florida Department of Education
Student Performance Standards**

Program Title: Medical Information Coder/Biller
CIP Number: 0351070707
Program Length: 34 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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01 Develop basic speaking and active listening skills.
02.02 Develop basic observational skills and related documentation strategies in written and oral form.
02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	
	08.01	Describe the code of ethics consistent with healthcare occupations.

	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.
	11.03	Demonstrate ability to connect to the internet.

	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	115.03	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 CPT coding systems, both manual and automated–The student will be able to:	
	16.01	Outline the development of nomenclatures and classification systems.
	16.02	Identify conventions and guidelines used in coding.
	16.03	Describe the process to annually update coding resources.
	16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.

	16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
	16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
	16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
	16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
	16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
	16.10	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		Demonstrate proficiency in ICD coding complexities–The student will be able to:
	17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
	17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
	17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
	17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
	17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
	17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
	17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
	17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.
18.0		Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:
	18.01	Describe origin, history and definition of all medical record types.
	18.02	Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03	Explain the classification and functions of health information management personnel and chain of command.
	18.04	State reasons medical records are important in the health care delivery system.
	18.05	Explain different filing systems used in health care institutions.
	18.06	Describe the development of the medical record to include all record types.

	18.07	Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08	Demonstrate the use of a master patient index (MPI) system.
19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:	
	19.01	Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02	Discuss the Code of Ethics of the American Health Information Management Association.
	19.03	Explain the scope of practice of the Medical Coder/Biller.
	19.04	Demonstrate ethical coding practices as outlined by AHIMA.
	19.05	Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:	
	20.01	Demonstrate an understanding of the revenue cycle management processes.
	20.02	Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03	Compare and contrast various reimbursement entities.
	20.04	Identify sources of payment, including patient and third parties.
	20.05	Use medical billing software.
	20.06	Perform electronic claims billing and submission.
	20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
	20.08	Analyze claims rejection, correct and resubmit for payment.
	20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
	20.10	Identify the various external regulating agencies and their impact on the coding systems.
	20.11	Discuss chargemaster and superbill maintenance.
	20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

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 34 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 Healthcareer Association
7500 West 160th Street
Stilwell, Kansas 66085
800-499-9092
www.nhanow.com

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

<u>Additional Resources</u>

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Healthcare Informatics Specialist**
Career Cluster: **Health Science**

<mark>NOTE: This program has been daggered for deletion with 2014-2015 being the last cohort of students permitted to enroll in the program. <u>After 2014-2015, no new students may be enrolled in this program.</u> Students already enrolled in the program may, at the District's discretion, continue taking courses in the program until completion. **Beginning in 2015-2016, new students should be enrolled in Healthcare Informatics Specialist (NEW) – CIP# 0351070712.**</mark>

CCC	
CIP Number	0351070711
Program Type	College Credit Certificate (CCC)
Program Length	18 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

<u>Purpose</u>

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 the healthcare delivery system and health occupations.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0	Explore health informatics and information management as a profession.
04.0	Demonstrate an understanding of health data concepts.
05.0	Describe the functions of a health record.
06.0	Demonstrate a basic understanding of Health Information Technology.
07.0	Discuss classification systems, clinical vocabularies and terminologies.
08.0	Explore ethical issues in Health Informatics and Information Management.
09.0	Identify the importance of privacy and health records law in healthcare.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations.
11.0	Demonstrate computer knowledge and skills.
12.0	Demonstrate employability skills.
13.0	Demonstrate a basic understanding of the various informatics related disciplines.
14.0	Demonstrate ethical and legal principles with regard to the role of the informatics specialist.
15.0	Utilize valid resources in healthcare informatics to retrieve and analyze relevant information.
16.0	Manage health data.
17.0	Manage healthcare statistics, including biomedical research and quality.
18.0	Utilize appropriate information technology and systems.
19.0	Apply project management principles and practices to health informatics activities.
20.0	Participate in the planning, design, selection, implementation, integration, testing, and support for health information systems.
21.0	Demonstrate an understanding of the fundamental principles related to health record data and work flow management.
22.0	Demonstrate proficiency in electronic health/medical record systems and work flow management.
23.0	Demonstrate proficiency 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: **0351070711**
Program Length: **18 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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
	01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
	02.01 Develop basic speaking and active listening skills.
	02.02 Develop basic observational skills and related documentation strategies in written and oral form.
	02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
Healthcare Informatics Specialist: Students completing intended outcomes 13- 23 in this module meet the requirements for the completion of Healthcare Informatics Specialist. SOC Code 29-2071 (Medical Records and Health Information Technicians)		
13.0	Demonstrate a basic understanding of the various informatics related disciplines. – The student will be able to:	
	13.01	Identify key events in the history and development of the informatics discipline, including the present industry environment

		and future trends.
	13.02	Demonstrate comprehensive knowledge of health data standards related to the development of the computerized infrastructure necessary to support the implementation of electronic health/medical records.
	13.03	Explore the role of informatics professionals, specifically in the assessment of training needs and ethical practices to safeguard confidential health information.
	13.04	Explain the scope of practice of the healthcare informatics technician.
14.0	Demonstrate ethical and legal principles with regard to the role of the informatics specialist – The student will be able to:	
	14.01	Discuss the Code of Ethics of the American Health Information Management Association (AHIMA) and other informatics related professional organizations.
	14.02	Explain the scope of practice of the healthcare informatics specialist.
15.0	Utilize valid 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. –The student will be able to:	
	16.01	Collect and maintain health data (such as data elements, data sets, and databases).
	16.02	Apply policies and procedures to ensure the accuracy of health data.
	16.03	Compare clinical vocabulary systems.
	16.04	Verify timelines, completeness, accuracy, and appropriateness of data and data sources for patient care, management, billing reports, registries, and/or databases.
	16.05	Maintain healthcare information requirements and health data standards.
	16.06	Collect, analyze and report quality measures.
	16.07	Maintain and interpret user access logs/audit trails to track history of access to and disclosure of identifiable patient data.

17.0	Manage healthcare statistics, including biomedical research and quality. –The student will be able to:	
	17.01	Abstract and maintain data for clinical indices/databases/registries.
	17.02	Collect, organize, and present data for quality management, utilization management, risk management, and other related studies.
	17.03	Compute and interpret healthcare statistics.
	17.04	Understand Institutional Review Board (IRB) processes and policies.
	17.05	Use specialized databases to meet specific organization needs such as medical research and disease registries.
	17.06	Abstract and report data for facility wide quality management and performance improvement programs.
	17.07	Analyze clinical data to identify trends that demonstrate quality, safety, and effectiveness of healthcare.
18.0	Utilize appropriate information technology and systems. – The student will be able to:	
	18.01	Use technology, including hardware and software, to ensure data collection, storage, analysis and reporting of information.
	18.02	Demonstrate advanced proficiency in using such as spreadsheets and databases in the execution of projects and presentations.
	18.03	Use specialized software in the completion of HIM processes such as record tracking, release of information, coding, grouping, registries, billing, quality improvement, and imaging.
	18.04	Apply policies and procedures to the use of networks, including internet and intranet applications to facilitate the electronic health record (EHR), personal health record (PHR), public health and other administrative applications.
	18.05	Apply knowledge of data base architecture and design (such as data dictionary, data modeling, data warehousing) to meet departmental needs.
	18.06	Use appropriate electronic or imaging technology for data/record storage.
	18.07	Design, query and generate reports to facilitate information retrieval.
	18.08	Apply retention and destruction policies for health information.

	18.09	Maintain archival and retrieval systems for patient information stored in multiple formats.
	18.10	Coordinate, use, and maintain systems for document imaging and storage.
	18.11	Apply confidentiality and security measures to protect electronic health information.
	18.12	Protect data integrity and validity using software or hardware technology.
	18.13	Apply departmental and organizational data and information system security policies
	18.14	Use and summarize data compiled from audit trails and data quality monitoring programs.
19.0	Apply project management principles and practices to health informatics activities. – The student will be able to:	
	19.01	Demonstrate an understanding of the definition and general principles of healthcare informatics project management.
	19.02	Demonstrate skills associated with planning, executing, and tracking a healthcare informatics project.
	19.03	Demonstrate abilities related to managing work teams, allocating project resources, and resolving problems associated with a healthcare informatics project.
20.0	Participate in the planning, design, selection, implementation, integration, testing, and support for health information systems – The student will be able to:	
	20.01	Demonstrate the ability to research best practices and perform a needs assessment to determine the architecture and system specifications needed for selection of an electronic health/medical record system for specific healthcare environments.
	20.02	Evaluate, select, and implement information technologies to manage health data and systems in various healthcare settings, i.e. hospitals, clinics, physician practices.
	20.03	Identify technological and behavioral barriers and potential solutions associated with electronic health/medical record implementation initiatives.
	20.04	Utilize project management skills and tools.
	20.05	Develop S.M.A.R.T. goals for Health Information Technology projects.

	20.06	Identify appropriate input/output devices and hardware configuration.
	20.07	Assess workflow and process assessment as it pertains to information technology.
	20.08	Describe information systems theory and the system development life cycle.
	20.09	Demonstrate an understanding of strategic planning for implementation of health information systems.
	20.10	Evaluate security standards including physical, virtual, and network risk areas.
	20.11	Assist in the development of end-user training sessions, including planning training sessions and development of training material.
21.0	Demonstrate an understanding of the fundamental principles related to health record data and work flow management. – The student will be able to:	
	21.01	Demonstrate an understanding of the architectural and operational components of an integrated health management information system.
	21.02	Demonstrate knowledge of health/medical record relational database design, management, and data warehousing/mining for decision support.
	21.03	Demonstrate the ability to utilize data flow diagrams and process design and redesign methodologies.
22.0	Demonstrate proficiency in electronic health/medical record systems and work flow management. – The student will be able to:	
	22.01	Recognize best practices.
	22.02	Explain the purpose of a needs assessment.
	22.03	Assist in the identification and selection of information technologies to manage health data and systems in various healthcare settings, i.e. hospitals, clinics, physician practices.
	22.04	Identify technological and behavioral barriers associated with electronic health/medical record implementation initiatives.
	22.05	Explore the influence and scope of electronic health/medical record system practices on a global and international scale.
23.0	Demonstrate proficiency in the application and integration of healthcare informatics concepts and skills through practical lab experiences –	

	The student will be able to:
	23.01 Explore the role and responsibilities of the health informatics specialist as team leader and/or project manager.
	23.02 Apply knowledge and skills related to organization or electronic health/medical record operations, personnel, equipment and resources.
	23.03 Explore real-world applications of healthcare informatics principles and practices.
	23.04 Demonstrate assimilation of knowledge and skills necessary for entry-level performance as a health informatics specialist.
	23.05 Demonstrate an understanding of the definition and general principles of healthcare informatics project management.
	23.06 Demonstrate skills associated with planning, executing, and tracking a healthcare informatics project.
	23.07 Demonstrate abilities related to managing work teams, allocating project resources, and resolving problems associated with a healthcare informatics project.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Healthcare Informatics Specialist (NEW)**
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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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 the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Demonstrate knowledge of appropriate health services organization and delivery system regulations.
11.0   Demonstrate computer knowledge and skills.
12.0   Demonstrate employability skills.
13.0   Demonstrate a basic understanding of the various informatics related disciplines.
14.0   Demonstrate ethical and legal principles with regard to the role of the informatics specialist.
15.0   Utilize valid resources in healthcare informatics to retrieve and analyze relevant information.
16.0   Manage health data.
17.0   Manage healthcare statistics, including biomedical research and quality.
18.0   Utilize appropriate information technology and systems.
19.0   Apply project management principles and practices to health informatics activities.
20.0   Participate in the planning, design, selection, implementation, integration, testing, and support for health information systems.
21.0   Demonstrate an understanding of the fundamental principles related to health record data and work flow management.
22.0   Demonstrate proficiency in electronic health/medical record systems and work flow management.
23.0   Demonstrate proficiency 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 (NEW)
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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01 Develop basic speaking and active listening skills.
02.02 Develop basic observational skills and related documentation strategies in written and oral form.
02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
Healthcare Informatics Specialist: Students completing intended outcomes 13- 23 in this module meet the requirements for the completion of Healthcare Informatics Specialist. SOC Code 29-2071 (Medical Records and Health Information Technicians)		
13.0	Demonstrate a basic understanding of the various informatics related disciplines. – The student will be able to:	
	13.01	Identify key events in the history and development of the informatics discipline, including the present industry environment

		and future trends.
	13.02	Demonstrate comprehensive knowledge of health data standards related to the development of the computerized infrastructure necessary to support the implementation of electronic health/medical records.
	13.03	Explore the role of informatics professionals, specifically in the assessment of training needs and ethical practices to safeguard confidential health information.
	13.04	Explain the scope of practice of the healthcare informatics technician.
14.0	Demonstrate ethical and legal principles with regard to the role of the informatics specialist – The student will be able to:	
	14.01	Discuss the Code of Ethics of the American Health Information Management Association (AHIMA) and other informatics related professional organizations.
	14.02	Explain the scope of practice of the healthcare informatics specialist.
15.0	Utilize valid 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. –The student will be able to:	
	16.01	Collect and maintain health data (such as data elements, data sets, and databases).
	16.02	Apply policies and procedures to ensure the accuracy of health data.
	16.03	Compare clinical vocabulary systems.
	16.04	Verify timelines, completeness, accuracy, and appropriateness of data and data sources for patient care, management, billing reports, registries, and/or databases.
	16.05	Maintain healthcare information requirements and health data standards.
	16.06	Collect, analyze and report quality measures.
	16.07	Maintain and interpret user access logs/audit trails to track history of access to and disclosure of identifiable patient data.

17.0	Manage healthcare statistics, including biomedical research and quality. –The student will be able to:	
	17.01	Abstract and maintain data for clinical indices/databases/registries.
	17.02	Collect, organize, and present data for quality management, utilization management, risk management, and other related studies.
	17.03	Compute and interpret healthcare statistics.
	17.04	Understand Institutional Review Board (IRB) processes and policies.
	17.05	Use specialized databases to meet specific organization needs such as medical research and disease registries.
	17.06	Abstract and report data for facility wide quality management and performance improvement programs.
	17.07	Analyze clinical data to identify trends that demonstrate quality, safety, and effectiveness of healthcare.
18.0	Utilize appropriate information technology and systems. – The student will be able to:	
	18.01	Use technology, including hardware and software, to ensure data collection, storage, analysis and reporting of information.
	18.02	Demonstrate advanced proficiency in using such as spreadsheets and databases in the execution of projects and presentations.
	18.03	Use specialized software in the completion of HIM processes such as record tracking, release of information, coding, grouping, registries, billing, quality improvement, and imaging.
	18.04	Apply policies and procedures to the use of networks, including internet and intranet applications to facilitate the electronic health record (EHR), personal health record (PHR), public health and other administrative applications.
	18.05	Apply knowledge of data base architecture and design (such as data dictionary, data modeling, data warehousing) to meet departmental needs.
	18.06	Use appropriate electronic or imaging technology for data/record storage.
	18.07	Design, query and generate reports to facilitate information retrieval.
	18.08	Apply retention and destruction policies for health information.

	18.09	Maintain archival and retrieval systems for patient information stored in multiple formats.
	18.10	Coordinate, use, and maintain systems for document imaging and storage.
	18.11	Apply confidentiality and security measures to protect electronic health information.
	18.12	Protect data integrity and validity using software or hardware technology.
	18.13	Apply departmental and organizational data and information system security policies
	18.14	Use and summarize data compiled from audit trails and data quality monitoring programs.
19.0	Apply project management principles and practices to health informatics activities. – The student will be able to:	
	19.01	Demonstrate an understanding of the definition and general principles of healthcare informatics project management.
	19.02	Demonstrate skills associated with planning, executing, and tracking a healthcare informatics project.
	19.03	Demonstrate abilities related to managing work teams, allocating project resources, and resolving problems associated with a healthcare informatics project.
20.0	Participate in the planning, design, selection, implementation, integration, testing, and support for health information systems – The student will be able to:	
	20.01	Demonstrate the ability to research best practices and perform a needs assessment to determine the architecture and system specifications needed for selection of an electronic health/medical record system for specific healthcare environments.
	20.02	Evaluate, select, and implement information technologies to manage health data and systems in various healthcare settings, i.e. hospitals, clinics, physician practices.
	20.03	Identify technological and behavioral barriers and potential solutions associated with electronic health/medical record implementation initiatives.
	20.04	Utilize project management skills and tools.
	20.05	Develop S.M.A.R.T. goals for Health Information Technology projects.

	20.06	Identify appropriate input/output devices and hardware configuration.
	20.07	Assess workflow and process assessment as it pertains to information technology.
	20.08	Describe information systems theory and the system development life cycle.
	20.09	Demonstrate an understanding of strategic planning for implementation of health information systems.
	20.10	Evaluate security standards including physical, virtual, and network risk areas.
	20.11	Assist in the development of end-user training sessions, including planning training sessions and development of training material.
21.0	Demonstrate an understanding of the fundamental principles related to health record data and work flow management. – The student will be able to:	
	21.01	Demonstrate an understanding of the architectural and operational components of an integrated health management information system.
	21.02	Demonstrate knowledge of health/medical record relational database design, management, and data warehousing/mining for decision support.
	21.03	Demonstrate the ability to utilize data flow diagrams and process design and redesign methodologies.
22.0	Demonstrate proficiency in electronic health/medical record systems and work flow management. – The student will be able to:	
	22.01	Recognize best practices.
	22.02	Explain the purpose of a needs assessment.
	22.03	Assist in the identification and selection of information technologies to manage health data and systems in various healthcare settings, i.e. hospitals, clinics, physician practices.
	22.04	Identify technological and behavioral barriers associated with electronic health/medical record implementation initiatives.
	22.05	Explore the influence and scope of electronic health/medical record system practices on a global and international scale.
23.0	Demonstrate proficiency in the application and integration of healthcare informatics concepts and skills through practical lab experiences –	

	The student will be able to:
	23.01 Explore the role and responsibilities of the health informatics specialist as team leader and/or project manager.
	23.02 Apply knowledge and skills related to organization or electronic health/medical record operations, personnel, equipment and resources.
	23.03 Explore real-world applications of healthcare informatics principles and practices.
	23.04 Demonstrate assimilation of knowledge and skills necessary for entry-level performance as a health informatics specialist.
	23.05 Demonstrate an understanding of the definition and general principles of healthcare informatics project management.
	23.06 Demonstrate skills associated with planning, executing, and tracking a healthcare informatics project.
	23.07 Demonstrate abilities related to managing work teams, allocating project resources, and resolving problems associated with a healthcare informatics project.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Medical Coder/Biller-ATD (NEW)**
Program Type: **ATD (Applied Technology Diploma)**
Career Cluster: **Health Science**

CC		PSAV
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	
SOC Codes (all applicable)	29-2071 Medical Records and Health Information Technicians 29-2099 Health Technologists and Technicians, All Other	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Mathematics 10 Reading: 11 Language: 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 technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV 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
	HIM0091	Medical Coder/Biller I	350 hours	29-2071
	HIM0092	Medical Coder/Biller II	350 hours	
B	HIM0093	Medical Coder/Biller III	320 hours	

* Students who have taken the Health Core (HSC0003) previously as part of this program are not required to take HIM0009 to complete the program. These students should continue on to OCP B. Beginning in 2011-12 new students should be enrolled in HIM0009 as the first course in the program.

College Credit

When offered at the community college level, this ATD program is part of the Health Information Technology (1351070700) and has a program length of 26 credits.

Standards

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

01.0   Demonstrate an understanding of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Utilize appropriate health services organization and delivery system regulations.
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 CPT coding systems, both manual and automated.
17.0   Demonstrate proficiency in ICD coding complexities.
18.0   Explain the significance of health information services to the Medical Coder/Biller.
19.0   Demonstrate ethical and legal principles with regard to the use of medical records.
20.0   Demonstrate understanding of medical billing.

Florida Department of Education
Student Performance Standards

Program Title: **Medical Coder/Biller-ATD (New)**
PSAV Number: **H170530**

When this program is offered at the PSAV level, the following organization of courses, standards, and benchmarks apply.

Course Number: HIM0009 **Occupational Completion Point: A** **Introduction to Health Information Technology – 90 Hours – SOC Code 29-2099**	
01.0	**Demonstrate an understanding of the healthcare delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	**Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:**
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including 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	Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	

	08.01	Describe the code of ethics consistent with healthcare occupations.
	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.

	11.03	Demonstrate ability to connect to the internet.
	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).

Course Number: HIM HIM0091
Occupational Completion Point: B
Medical Coder/Biller I – 350 Hours – SOC Code 29-2071

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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	15.04	Demonstrate an understanding of pharmacological agents, uses, treatments, and utilizing drug reference sources.
	15.05	Identify and use diagnostic test terminology.

Course Number: HIM HIM0092 Occupational Completion Point: B Medical Coder/Biller II – 350 Hours – SOC Code 29-2071	
16.0	Demonstrate proficiency in use of ICD and CPT coding systems, both manual and automated–The student will be able to:
16.01	Outline the development of nomenclatures and classification systems.
16.02	Identify conventions and guidelines used in coding.
16.03	Describe the process to annually update coding resources.
16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.
16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
16.10	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	Demonstrate proficiency in ICD coding complexities–The student will be able to:
17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.

18.0	Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:
	18.01 Describe origin, history and definition of all medical record types.
	18.02 Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03 Explain the classification and functions of health information management personnel and chain of command.
	18.04 State reasons medical records are important in the health care delivery system.
	18.05 Explain different filing systems used in health care institutions.
	18.06 Describe the development of the medical record to include all record types.
	18.07 Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08 Demonstrate the use of a master patient index (MPI) system.

Course Number: HIM HIM0093 **Occupational Completion Point: B** **Medical Coder/Biller III – 320 Hours – SOC Code 29-2071**	
19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:
	19.01 Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02 Discuss the Code of Ethics of the American Health Information Management Association.
	19.03 Explain the scope of practice of the Medical Coder/Biller.
	19.04 Demonstrate ethical coding practices as outlined by AHIMA.
	19.05 Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:
	20.01 Demonstrate an understanding of the revenue cycle management processes.
	20.02 Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03 Compare and contrast various reimbursement entities.
	20.04 Identify sources of payment, including patient and third parties.
	20.05 Use medical billing software.

20.06	Perform electronic claims billing and submission.
20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
20.08	Analyze claims rejection, correct and resubmit for payment.
20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
20.10	Identify the various external regulating agencies and their impact on the coding systems.
20.11	Discuss chargemaster and superbill maintenance.
20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01	Develop basic speaking and active listening skills.
02.02	Develop basic observational skills and related documentation strategies in written and oral form.
02.03	Identify characteristics of successful and unsuccessful communication including 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	Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	
	08.01	Describe the code of ethics consistent with healthcare occupations.

	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.
	11.03	Demonstrate ability to connect to the internet.

	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	115.03	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 CPT coding systems, both manual and automated–The student will be able to:	
	16.01	Outline the development of nomenclatures and classification systems.
	16.02	Identify conventions and guidelines used in coding.
	16.03	Describe the process to annually update coding resources.
	16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.

	16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
	16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
	16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
	16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
	16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
	16.10	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	Demonstrate proficiency in ICD coding complexities–The student will be able to:	
	17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
	17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
	17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
	17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
	17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
	17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
	17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
	17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.
18.0	Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:	
	18.01	Describe origin, history and definition of all medical record types.
	18.02	Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03	Explain the classification and functions of health information management personnel and chain of command.
	18.04	State reasons medical records are important in the health care delivery system.
	18.05	Explain different filing systems used in health care institutions.
	18.06	Describe the development of the medical record to include all record types.

	18.07	Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08	Demonstrate the use of a master patient index (MPI) system.
19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:	
	19.01	Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02	Discuss the Code of Ethics of the American Health Information Management Association.
	19.03	Explain the scope of practice of the Medical Coder/Biller.
	19.04	Demonstrate ethical coding practices as outlined by AHIMA.
	19.05	Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:	
	20.01	Demonstrate an understanding of the revenue cycle management processes.
	20.02	Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03	Compare and contrast various reimbursement entities.
	20.04	Identify sources of payment, including patient and third parties.
	20.05	Use medical billing software.
	20.06	Perform electronic claims billing and submission.
	20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
	20.08	Analyze claims rejection, correct and resubmit for payment.
	20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
	20.10	Identify the various external regulating agencies and their impact on the coding systems.
	20.11	Discuss chargemaster and superbill maintenance.
	20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

<p align="center">**Additional Information**</p>

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 160th Street
Stilwell, KS 66085
800-499-9092
www.nhanow.com

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs 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 26 credits. When offered at a technical center the standard length of this program is 1000 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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Medical Information Coder/Biller (New)
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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Health Information Technology AS degree program (1351070708).

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.

<u>Standards</u>

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

01.0   Demonstrate an understanding of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Explore health informatics and information management as a profession.
04.0   Demonstrate an understanding of health data concepts.
05.0   Describe the functions of a health record.
06.0   Demonstrate a basic understanding of Health Information Technology.
07.0   Discuss classification systems, clinical vocabularies and terminologies.
08.0   Explore ethical issues in Health Informatics and Information Management.
09.0   Identify the importance of privacy and health records law in healthcare.
10.0   Utilize appropriate health services organization and delivery system regulations.
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 CPT coding systems, both manual and automated.
17.0   Demonstrate proficiency in ICD coding complexities.
18.0   Explain the significance of health information services to the Medical Coder/Biller.
19.0   Demonstrate ethical and legal principles with regard to the use of medical records.
20.0   Demonstrate understanding of medical billing.

Florida Department of Education
Student Performance Standards

Program Title: Medical Information Coder/Biller (New)
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 delivery system 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 regulatory agencies and organizations within the healthcare delivery system
01.04 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively–The student will be able to:
02.01 Develop basic speaking and active listening skills.
02.02 Develop basic observational skills and related documentation strategies in written and oral form.
02.03 Identify characteristics of successful and unsuccessful communication including 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 Observe professional e-mail 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 educations 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	Recognize elements of communication using a sender-receiver model.
	02.12	Distinguish between and report subjective and objective information.
	02.13	Report relevant information in order of occurrence.
03.0	Explore health information management as a 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 management profession.
	03.03	Demonstrate knowledge of professional associations within HIM.
04.0	Demonstrate an understanding of health data concepts–The student will be able to:	
	04.01	Describe the various uses of health data (primary and secondary).
	04.02	Describe various characteristics of health data quality and standards.
05.0	Describe 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 record.
	05.03	Follow medical records policies and procedures for security, including confidentiality.
06.0	Demonstrate a basic understanding of Health Information Technology–The student will be able to:	
	06.01	Discuss how healthcare reform legislation can and does affect the HIT field.
	06.02	Interpret information from Electronic Health Records (EHR) and applications in healthcare
	06.03	Demonstrate an understanding of creation, use, and purpose of the electronic health record.
07.0	Discuss classification systems, clinical vocabularies and terminologies–The student will be able to:	
	07.01	Demonstrate knowledge of administrative terminologies as they relate to HIM.
	07.02	Demonstrate knowledge of clinical terminologies as they relate to HIM.
08.0	Explore ethical issues in Health Information Management–The student will be able to:	
	08.01	Describe the code of ethics consistent with healthcare occupations.

	08.02	Recognize ethical issues related to health information technology.
	08.03	Recognize ethical issues related to coding and billing/ healthcare documentation.
	08.04	Demonstrate basic knowledge of accreditation standards and licensure agencies.
09.0	Identify the importance of privacy and health records law in healthcare–The student will be able to:	
	09.01	Explain the importance of maintaining ethical and legal standards in compiling and using paper-based and electronic health/medical records.
	09.02	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).
	09.03	Define and explain the composition of the legal patient record.
	09.04	Follow medical records policies and procedures for security, including confidentiality.
10.0	Demonstrate knowledge of appropriate health services organization and delivery system regulations. – The student will be able to:	
	10.01	Demonstrate knowledge of information system policies and procedures required by national health information initiatives on the healthcare delivery system.
	10.02	Demonstrate knowledge of current laws, accreditation, licensure, and certification standards related to health information initiatives from the national, state, local, and facility levels.
	10.03	Demonstrate knowledge of policies and procedures to comply with the changing regulations among various payment systems for healthcare services such as Medicare, Medicaid, managed care, etc.
	10.04	Differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs.
	10.05	Describe how to monitor and re-adjust workflow as necessary.
	10.06	Describe the most significant legal and regulatory requirements related to the health information infrastructure.
	10.07	Demonstrate knowledge of policies and procedures for access and disclosure of personal health information.
	10.08	Describe procedures for patient-specific data to authorized users.
	10.09	Identify and recommend solutions to privacy issues/problems.
	10.10	Implement appropriate Joint Commission patient safety goals and other applicable regulating/accrediting agency guidelines.
11.0	Demonstrate computer knowledge and skills–The student will be able to:	
	11.01	Demonstrate keyboarding skills.
	11.02	Demonstrate the ability to create, manage, organize and retrieve files.
	11.03	Demonstrate ability to connect to the internet.

	11.04	Demonstrate ability to perform research on the internet by identifying reliable websites.
	11.05	Demonstrate ability to send and receive e-mail.
	11.06	Demonstrate ability to send messages with attached files.
	11.07	Demonstrate proficiency in Microsoft Office Suite including Word, Excel and PowerPoint.
	11.08	Demonstrate the ability to install software programs as downloads or from a computer disk.
	11.09	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 personal traits or attitudes desirable in a member of the healthcare team.
	12.02	Define basic 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	Write an appropriate resume.
	12.05	Conduct a job search.
	12.06	Complete a job application form correctly.
	12.07	Demonstrate competence in job interview techniques.
	12.08	Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.
	12.09	Identify acceptable work habits.
	12.10	Recognize appropriate affective/professional behavior.
	12.11	Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services or biotechnology research and development).
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.
14.0	Demonstrate proficiency in the application of medical terminology–The student will be able to:	
	14.01	Recognize and 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	Recognize and identify terminology of hospital and other clinical forms.
	14.06	Demonstrate use of basic terminology common to medical/surgical practices.
	14.07	Use medical reference materials.
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 morphology of organisms and their role in the disease process.
	15.03	Demonstrate an understanding of the pathogenesis of diseases of all the body systems.
	115.03	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 CPT coding systems, both manual and automated–The student will be able to:	
	16.01	Outline the development of nomenclatures and classification systems.
	16.02	Identify conventions and guidelines used in coding.
	16.03	Describe the process to annually update coding resources.
	16.04	Demonstrate the ability to code CPT and HCPCS II Codes with a focus on correct coding and sequencing of CPT codes for Anesthesia; Evaluation & Management (E&M); Surgery; Pathology and Laboratory; Radiology , and Medicine.

	16.05	Identify when it is appropriate to use HCPCS Level II codes and how to code them correctly.
	16.06	Use case studies and authentic medical records/abstracts to code intermediate and advanced, complex procedure code assignment using CPT (all sections), HCPCS II Codes, and, the current ICD Procedural Coding System
	16.07	Append all appropriate modifiers to both CPT and HCPCS II codes
	16.08	Explain Physician Quality Reporting Initiative (PQRI) and its relationship to CPT Category II codes.
	16.09	Demonstrate the ability to accurately code and sequence ICD-9-CM (volumes 1, 2 &3), ICD-10-CM and ICD-10-PCS Codes by body systems and supplemental chapters/materials.
	16.10	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	Demonstrate proficiency in ICD coding complexities–The student will be able to:	
	17.01	Apply advanced ICD coding concepts to diagnostic complexities of complex case studies with an articulation of coding rules and sequencing.
	17.02	Understand case-mix analysis, severity of illness systems, and coding quality monitors and reporting.
	17.03	Using a variety of simulated patient records (Emergency Department, Ambulatory Surgery, and Inpatient), interpret data and assign diagnostic codes.
	17.04	Describe characteristics of prospective payment systems (DRG, APR-DRG, APC and RUGS groupers) for various types of healthcare settings.
	17.05	Review the format and conventions of ICD-9, ICD-10-CM and ICD-10-PCS coding systems.
	17.06	Identify the areas of similarities and differences between ICD-9-CM and ICD-10-CM, ICD-10-PCS and other diagnosis coding systems (DSM-IV, ICD-O).
	17.07	Use and maintain application processes to support other clinical classification systems (DSM IV, ICD-O).
	17.08	Explain how the Systematized Nomenclature of Medicine clinical terminology is utilized in the development of an electronic health record system.
18.0	Explain the significance of health information services to the Medical Coder/Biller–The student will be able to:	
	18.01	Describe origin, history and definition of all medical record types.
	18.02	Describe the functions of the medical record department, i.e., data collecting, filing, retrieving, coding, indexing, and workflow in all record types.
	18.03	Explain the classification and functions of health information management personnel and chain of command.
	18.04	State reasons medical records are important in the health care delivery system.
	18.05	Explain different filing systems used in health care institutions.
	18.06	Describe the development of the medical record to include all record types.

	18.07	Explain the importance of the medical record in relation to state and federal agencies, accrediting and licensing agencies.
	18.08	Demonstrate the use of a master patient index (MPI) system.
19.0	Demonstrate ethical and legal principles with regard to the use of medical records–The student will be able to:	
	19.01	Explain the importance of maintaining ethical and legal standards in compiling and using medical records.
	19.02	Discuss the Code of Ethics of the American Health Information Management Association.
	19.03	Explain the scope of practice of the Medical Coder/Biller.
	19.04	Demonstrate ethical coding practices as outlined by AHIMA.
	19.05	Identify HIPAA compliance guidelines and regulations for electronic health information.
20.0	Demonstrate understanding of medical billing–The student will be able to:	
	20.01	Demonstrate an understanding of the revenue cycle management processes.
	20.02	Complete CMS (Centers of Medicare/Medicaid Services) 1500 or comparable claim form.
	20.03	Compare and contrast various reimbursement entities.
	20.04	Identify sources of payment, including patient and third parties.
	20.05	Use medical billing software.
	20.06	Perform electronic claims billing and submission.
	20.07	Interpret explanation of benefits (EOBs) and explanation of Medicare benefits (EOMBs).
	20.08	Analyze claims rejection, correct and resubmit for payment.
	20.09	Explain the relationship of current payment methodologies and systems including but not limited to Medicare Severity Diagnosis Related Groups (MS-DRGs) Ambulatory Payment Classifications (APCs), Resource Based Relative Value Scale (RBRVS), and Ambulatory Surgery Center (ASC) Payment System.
	20.10	Identify the various external regulating agencies and their impact on the coding systems.
	20.11	Discuss chargemaster and superbill maintenance.
	20.12	Understand compliance strategies and reporting as well as regulatory guidelines such as the National Correct Coding Initiative (NCCI), Local Coverage Determination (LCD), National Coverage Determination (NCD) and the Outpatient Code Editor (OCE).

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 Healthcareer Association
7500 West 160th Street
Stilwell, Kansas 66085
800-499-9092
www.nhanow.com

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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 communication skills used by medical assistants.
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.
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 X-Ray procedures.
34.0   Demonstrate knowledge of pharmaceutical principles and administer medications.
35.0   Perform CLIA-waived diagnostic clinical laboratory procedures.
36.0   Demonstrate awareness of clinical microscopy techniques and procedures that may be performed in CLIA-exempt laboratories under physician supervision.
37.0   Demonstrate knowledge of emergency preparedness and protective practices.

38.0   Perform administrative office duties.
39.0   Perform administrative and general skills.
40.0   Perform clinical and general skills.
41.0   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 Medical Assistants**
	31-9099 Healthcare Support Workers, All Other
	43-4171 Receptionists and Information Clerks
	31-9097 Phlebotomists

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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

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 communication skills used by medical assistants. – The student will be able to:
	12.01 Organize written and verbal ideas in a concise, precise and logical manner.
	12.02 State examples of both verbal and non-verbal communication.
	12.03 Use medical terminology as appropriate for a medical assistant.
	12.04 Comply with safety signs, symbols, and labels.
	12.05 Describe the role of the medical assistant.
13.0	Demonstrate knowledge of legal and ethical responsibilities for medical assistants. – The student will be able to:
	13.01 Provide health care as set forth in Florida Statute for the medical assistant.

	13.02	Distinguish between the liability of the physicians and staff members in the medical office.
	13.03	Explain the principles for preventing medical liability.
	13.04	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.
	14.09	Identify and describe dietary guidelines necessary for common diseases.
	14.10	Create a patient teaching plan which addresses dietary guidelines and special needs.
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 Medical Record (EMR).
	15.05	Prepare and maintain medical records both manually and within the Electronic Medical Record (EMR).
	15.06	Screen and process mail.
	15.07	Schedule routine appointments and patient admissions and/or procedures both manually and within the Electronic Medical Record (EMR).
	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 Medical Record (EMR).
	15.13	Receive patients and visitors.
	15.14	Identify and maintain office security policies/procedures.
16.0	Demonstrate accepted professional, communication, and interpersonal skills. – 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 (job skills and duties) 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 microspecimens.
	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 patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
	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 and apply established protocol for patient and specimen identification for transport to a reference lab.
	20.03	Demonstrate knowledge of established protocol for patient and specimen identification in the Physician Office Laboratory (POL)
	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 and light headedness.
	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 "nosocomial/ hospital acquired infection."
	21.02	Describe and practice procedures for infection prevention including hand washing skills.
	21.03	Discuss and perform 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	Demonstrate knowledge of and 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.
	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	Demonstrate knowledge of Intravenous terminology, practices and equipment.

	24.03	Describe the dangers of Intravenous Treatment.
	24.04	Describe role of 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 standardize the cardiograph instrument.
	28.02	Identify three types of lead systems.
	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 any rhythm that is 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.
	29.10	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.
	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	Demonstrate knowledge of ultrasound treatment.
	32.03	Perform spirometry.
	32.04	Perform oximetry.
	32.05	Assist in the performance of a Pap and Pelvic.
33.0	Demonstrate basic X-Ray procedures. – The student will be able to:	

	33.01	Describe the basic operation of X-Ray equipment and accessories.
	33.02	Describe how to maintain x-ray film files.
	33.03	Describe computed and digital radiography systems.
	33.04	Demonstrate knowledge of the principles of exposure quality.
	33.05	Evaluate X-Ray film quality.
	33.06	Describe X-Ray principles and safety practices.
	33.07	Instruct patient in preparation for basic X-Ray examinations.
	33.08	Position patients for basic x-rays.
	33.09	Use precautions and provide appropriate protection for patients and staff in the presence of ionizing radiation.
	33.10	Maintain a safe working environment in radiological work areas.
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	Use correct pharmaceutical abbreviations and terminology.
	34.03	Identify various methods and routes of drug administration.
	34.04	Instruct patients regarding self-administration of medications.
	34.05	Calculate dosage and administer pharmaceuticals to correct anatomical sites, to correct patient, by correct route of administration, at the correct time and chart correctly.
	34.06	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.
	34.07	Demonstrate knowledge of emergency medications for various body systems.
	34.08	Identify the dangers and complications associated with drug administration
	34.09	Report medication errors.
	34.10	Demonstrate appropriate techniques to:
	34.10.01	Prepare and administer non-parenteral medications (solid & liquids).
	34.10.02	Prepare and administer parenteral medications.

	34.10.03	Reconstitute powdered drugs.
	34.10.04	Prepare injections from ampules and vials.
	34.10.05	Apply the Seven Rights of Drug Administration
35.0	**Perform CLIA-waived diagnostic clinical laboratory procedures. --The students will be able to:**	
	35.01	Recognize signs and symptoms that may indicate to the physician a need for laboratory testing.
	35.02	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as "CLIA waived" and the regulatory constraints on test performance.
	35.03	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.
	35.04	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.
	35.05	Instruct patients in the proper collection of urine (clean catch, mid-stream), sputum and stool specimens.
	35.06	Perform CLIA-waived occult blood tests.
	35.07	Perform CLIA-waived urinalysis testing including color and turbidity assessment , specific gravity and reagent test strips.
	35.08	Perform CLIA-waived hematology tests (e.g. - hemoglobin, hematocrit).
	35.09	Perform CLIA-waived chemistry tests (e.g. - glucose, cholesterol)
	35.10	Perform CLIA-waived pregnancy tests.
	35.11	Perform CLIA-waived infectious disease testing (e.g. – strep screen, mono test, influenza A/B)
	35.12	Explain Meaningful Use and how it affects the role of the medical assistant regarding the input of laboratory test orders in the EMR.
36.0	**Demonstrate awareness of clinical microscopy techniques and procedures that may be performed in CLIA-exempt laboratories under physician supervision– The student will be able to:**	
	36.01	Explain the CLIA-exemption for physician office laboratories
	36.02	Define the term "Provider Performed Microscopy" (PPM) and the regulatory constraints on test performance.
	36.03	Demonstrate the operation of a compound microscope using direct and oil immersion lens.
	36.04	Prepare a urine sediment for microscopic exam.
	36.05	Differentiate between gram positive and gram negative organisms.
	36.06	Explain the purpose of Wright's stained blood smears.

37.0	Demonstrate knowledge of emergency preparedness and protective practices. --The student will be able to:	
	37.01	Maintain and operate emergency equipment and supplies.
	37.02	Evaluate the work environment to identify safe vs. unsafe working conditions.
	37.03	Participate in a mock environmental exposure event and document steps taken.
	37.04	Explain an evacuation plan for a physician's office.
	37.05	Maintain a current list of community resources for emergency preparedness.
38.0	Perform administrative office duties. – The student will be able to:	
	38.01	Execute data management using Electronic Medical Record (EMR) 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.
	38.02	Explain Meaningful Use and how it applies to the medical assistant regarding the documentation of physician orders in the Electronic Medical Record (EMR).
	38.03	Execute non EMR 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, and keyboarding documents.
	38.04	Perform various financial procedures, including, but not limited to, billing and collection procedures, payroll procedures, and checkbook procedures.
	38.05	Maintain personnel records.
39.0	Perform administrative and general skills – the student will be able to:	
	39.01	Demonstrate proper and professional telephone technique.
	39.02	Recognize and respond to verbal communication.
	39.03	Recognize and respond to non-verbal communication.
	39.04	Maintain confidentiality and adhere to HIPAA regulations.
	39.05	Document both manually and electronically appropriately.
	39.06	Schedule appointments manually and electronically accurately.
	39.07	Schedules inpatient and/or outpatient procedures accurately.
	39.08	Organize patients' medical records.
	39.09	File medical records accurately.

	39.10	Prepare bank deposits accurately.
	39.11	Post entries on manual/electronic day sheet.
	39.12	Perform billing and /or ICD-9/10 and/or CPT coding.
	39.13	Greet patients courteously and professionally.
	39.14	Obtain or verify patient precertification or preauthorization.
	39.15	Demonstrate safety and quality assurance in the workplace.
40.0	Perform clinical and general skills – the student will be able to:	
	40.01	Demonstrate aseptic hand washing technique.
	40.02	Dispose of bio-hazardous waste in appropriate containers.
	40.03	Adhere to sterilization techniques according to standards.
	40.04	Practice standard precautions.
	40.05	Demonstrate venipuncture and/or capillary punctures.
	40.06	Instruct patients in the collection of specimens.
	40.07	Demonstrate electrocardiography.
	40.08	Demonstrate respiratory testing.
	40.09	Demonstrate CLIA waived testing.
	40.10	Stage patients and obtain vital signs.
	40.11	Obtain and record patient histories.
	40.12	Prepare and maintain examination and treatment area(s).
	40.13	Prepare patient for examinations and/or minor office procedures.
	40.14	Assist with examinations and/or minor office procedures.
	40.15	Prepare medications and/or perform non-intravenous injections.
	40.16	Provide and document patient education.

	40.17	Accurately record and report laboratory tests.
41.0	Display professional work habits integral to medical assisting. – the student will be able to:	
	41.01	Communicate appropriately in healthcare settings by listening, writing, speaking and presenting with professional demeanor.
	41.02	Collaborate, communicate and interact professionally with other healthcare professionals utilizing technology.
	41.03	Contribute to team efforts by fulfilling responsibilities and valuing diversity.
	41.04	Explore networking opportunities through professional associations.
	41.05	Exercise proper judgment and critical thinking skills in decision making.
	41.06	Adapt to changing organizational environments with flexibility.
	41.07	Build a portfolio reflecting experiences and skills gained during the externship.
	41.08	Report as expected, on time, appropriately dressed and groomed and ready to work.
	41.09	Model acceptable work habits as defined by company policy.
	41.10	Complete and follow through on tasks using time management skills and take initiative as warranted.
	41.11	Respond appropriately and quickly to patient's needs and concerns.
	41.12	Practice etiquette and social sensitivity in face to face interaction, on the telephone and the Internet.
	41.13	Actively adhere to policies and procedures that protect the patient's confidentiality and privacy.
	41.14	Display an understanding of resources related to patients' healthcare needs.

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).
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For further information contact:

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
www.caahep.org/
1361 Park Street
Clearwater, FL 33756
Phone: 727-210-2350
Fax: 727-210-2354

Accrediting Bureau of Health Education Schools (ABHES)
www.abhes.org/
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 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.

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)
> www.aama-ntl.org/
> 20 North Wacker Drive, Suite 1575
> Chicago, Illinois 60606 (312/899-1500)
>   Or
> American Medical Technologist (AMT)
> http://old.amt1.com/
> 10700 West Higgins Road, Suite 150
> Rosemont, Illinois 60018 (800 275-1268)

The Medical Assistant graduate may be prepared to take the Basic X-Ray Machine Operator State exam.
> Contact: Bureau of Radiation Control
> 4052 Bald Cypress Way, Bin #C85 Tallahassee, FL 32399-3252
> Phone: (850) 245-4910
> http://www.doh.state.fl.us/environment/radiation/

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml
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Florida Department of Education
Curriculum Framework

Program Title: **Pharmacy Technician-ATD**
Program Type: **ATD (Applied Technology Diploma)**
Career Cluster: **Health Science**

	CC	PSAV
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	
SOC Codes (all applicable)	29-2052 Pharmacy Technicians	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Mathematics: 11 Language: 10 Reading: 10	

Purpose

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

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 and health, safety, and environmental issues.

The content includes but is not limited to metric system, medical terminology, medicinal drugs, pharmaceutical compounding, USP 795 standards, sterile techniques, USP 797 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 technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV 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 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.
15.0   Perform clerical duties as related to Pharmacy Practice.
16.0   Demonstrate knowledge of basic pharmaceutical chemistry and drug classification as it relates to the human physiology.
17.0   Demonstrate knowledge of inventory control.
18.0   Initiate measurement and calculating techniques as it relates to compounding in pharmacy practice.
19.0   Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to the human physiology.
20.0   Prepare and deliver medications.
21.0   Prepackage unit dose medications.
22.0   Prepare sterile products.

Florida Department of Education
Student Performance Standards

Program Title: **Pharmacy Technician-ATD**
PSAV Number: **H170700**

When this program is offered at the PSAV 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 PSAV health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

PSAV Course Number: HSC0003
Occupational Completion Point: A
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

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 there role in the profession.
12.05	Demonstrate an understanding of Continuing Education (CE) requirements for pharmacy technicians and how to obtain them.
12.06	Identify the current trends and perspectives in the pharmacy practice.
12.07	Identify the means by which the application of team building can facilitate change within the pharmacy working environment.

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.
14.0	**Identify medical and legal considerations--The student will be able to:**
14.01	Articulate the significance and scope of current national and Florida law and administrative rules as they relate to the practice of the pharmacy technician.
14.02	Convey an understanding of medical legal concepts as they relate to the practice of the pharmacy technician.
14.03	Explain the need for accurate pharmacy documentation and recordkeeping.
14.04	Justify the importance of HIPAA in pharmacy practice.
14.05	Convey an understanding the patient's Bill of Rights as it relates to pharmacy.
14.06	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
14.07	Compare and contrast between controlled substances and their applicable regulations.
14.08	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials.
14.09	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
14.10	Understand and explain the legal requirements for final check by the pharmacist
14.11	Classify activities performed by pharmacy professionals as those that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists. For each activity, explain the rationale for the classification.
15.0	**Perform clerical duties as related to Pharmacy Practice.--The student will be able to:**
15.01	Design and evaluate pharmacy dispensing processes step-by-step in retail practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors.
15.02	Demonstrate computer applications in processing pharmacy prescription data.
15.03	Identify applications of E-Prescribing and facsimile.
15.04	Utilize and apply interactive communication skills while gathering of accurate information from patients and from other healthcare professionals
15.05	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements
15.06	Create, complete and maintain patient profiles.
15.07	Demonstrate telephone communication skills and routine inquiries.

	15.08	Convey an understanding appropriate practice standards pertaining to patient counseling.
	15.09	Demonstrate the knowledge of systems used in maintaining pharmacy records.
	15.10	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prescription processing.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification as it relates to the human physiology--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	Analyze pharmacy reference manuals and web sites.
	16.04	Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory control--The student will be able to:	
	17.01	Convey an understanding of industry standards in purchasing pharmaceutical supplies.
	17.02	Maintain controlled substance inventory.
	17.03	Display knowledge of prescription pricing systems used in pharmacy.
	17.04	Maintain stock inventory, communicate shortages and seek alternatives.
	17.05	Prepare 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 industry standards in management of Investigational Drugs.
18.0	Initiate measurement and calculating techniques as it relates to 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	Use common pharmaceutical weighing equipment.
	18.05	Use common pharmaceutical volume measurement equipment.
	18.06	Explain 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 the human physiology--The student will be able to:
19.01	Predict physical and chemical incompatibilities utilizing chemistry properties.
19.02	Describe electrolyte balances.
19.03	Relate the general sources, classes, indications, actions, routes and side effects of drugs.
19.04	Demonstrate an understanding of common adult doses of medications and respective contraindications.
20.0	Prepare and deliver medications--The student will be able to:
20.01	Read and prepare medication orders correctly.
20.02	Design and evaluate pharmacy dispensing processes step-by-step in institutional practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors
20.03	Check all new orders with medications listed on profiles while noting any discrepancies.
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	Demonstrate the proper technique of preparing pharmaceutical compounds. .
20.07	Demonstrate the ability to correctly fill and deliver medication cassettes.
20.08	Collect data from medication administration record and drug use and evaluation form.
20.09	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	Prepackage unit dose medications--The student will be able to:
21.01	Locate correct stock container.

	21.02	Measure, count required individual doses of medication.
	21.03	Label with required information utilizing "tall man" lettering.
	21.04	Operate unit dose packaging equipment.
	21.05	Place individual dose in appropriate containers, ~~re~~ prepackage in predetermined quantities.
	21.06	Prepackage unit dose hazardous drugs.
	21.07	Record prepackaged medication data correctly.
	21.08	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prepackaging unit dose medication.
22.0	Prepare sterile products --The student will be able to:	
	22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.
	22.02	Compare medication order with label on vial and check expiration date of product.
	22.03	Calculate drug dosage for parenteral use.
	22.04	Articulate common drug incompatibilities.
	22.05	Reconstitute parenteral medications.
	22.06	Use aseptic techniques to withdraw medication from stock vial measure correct quantity as instructed, select and insert it into IV solution without error.
	22.07	Use aseptic technique to withdraw medication from an ampule.
	22.08	Prepare parenteral solutions and discuss current intravenous preparation industry trends.
	22.09	Perform the preparation of total Parenteral Nutrition solutions.
	22.10	Perform the preparation of chemotherapeutic agents using proper safety techniques.
	22.11	Utilize the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
	22.12	Place label on IV solution container and keep records.
	22.13	Perform quality control check.
	22.14	Convey an understanding of storage requirements of reconstituted IV solutions.
	22.15	Convey an understanding of the proper disposal of hazardous Drugs.

22.16   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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

Pharmacy Technician (12-22)
12.0   Practice human relation skills.-The student will be able to:
12.01   Explore the meaning and duties of a pharmacy technician.
12.02   Explore the organizational flow of responsibilities within a pharmacy setting.
12.03   Understand the importance of developing and maintaining a professional rapport with co-workers.
12.04   Identify pharmacy organizations and there role in the profession.
12.05   Demonstrate an understanding of Continuing Education (CE) requirements for pharmacy technicians and how to obtain them.
12.06   Identify the current trends and perspectives in the pharmacy practice.
12.07   Identify the means by which the application of team building can facilitate change within the pharmacy working environment.
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.
14.0	**Identify medical and legal considerations--The student will be able to:**	
	14.01	Articulate the significance and scope of current national and Florida law and administrative rules as they relate to the practice of the pharmacy technician.
	14.02	Convey an understanding of medical legal concepts as they relate to the practice of the pharmacy technician.
	14.03	Explain the need for accurate pharmacy documentation and recordkeeping.
	14.04	Justify the importance of HIPAA in pharmacy practice.
	14.05	Convey an understanding the patient's Bill of Rights as it relates to pharmacy.
	14.06	Convey an understanding of pertinent laws governing pharmacy practice such as false prescriptions and drug diversion.
	14.07	Compare and contrast between controlled substances and their applicable regulations.
	14.08	Convey an understanding of the Florida Right to Know Act with respect to hazardous materials.
	14.09	Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.
	14.10	Understand and explain the legal requirements for final check by the pharmacist
	14.11	Classify activities performed by pharmacy professionals as those that may be performed by pharmacy technicians and those that must be performed by licensed pharmacists. For each activity, explain the rationale for the classification.
15.0	**Perform clerical duties as related to Pharmacy Practice.--The student will be able to:**	
	15.01	Design and evaluate pharmacy dispensing processes step-by-step in retail practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors.
	15.02	Demonstrate computer applications in processing pharmacy prescription data.
	15.03	Identify applications of E-Prescribing and facsimile.
	15.04	Utilize and apply interactive communication skills while gathering of accurate information from patients and from other healthcare professionals
	15.05	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements
	15.06	Create, complete and maintain patient profiles.
	15.07	Demonstrate telephone communication skills and routine inquiries.
	15.08	Convey an understanding appropriate practice standards pertaining to patient counseling.
	15.09	Demonstrate the knowledge of systems used in maintaining pharmacy records.

	15.10 Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prescription processing.
16.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification as it relates to the human physiology--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 Analyze pharmacy reference manuals and web sites.
	16.04 Apply knowledge of trade names, and generic name equivalents.
17.0	Demonstrate knowledge of inventory control--The student will be able to:
	17.01 Convey an understanding of industry standards in purchasing pharmaceutical supplies.
	17.02 Maintain controlled substance inventory.
	17.03 Display knowledge of prescription pricing systems used in pharmacy.
	17.04 Maintain stock inventory, communicate shortages and seek alternatives.
	17.05 Prepare 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 industry standards in management of Investigational Drugs.
18.0	Initiate measurement and calculating techniques as it relates to 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 Use common pharmaceutical weighing equipment.
	18.05 Use common pharmaceutical volume measurement equipment.
	18.06 Explain 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 the human physiology--The student will be able to:

	19.01	Predict physical and chemical incompatibilities utilizing chemistry properties.
	19.02	Describe electrolyte balances.
	19.03	Relate the general sources, classes, indications, actions, routes and side effects of drugs.
	19.04	Demonstrate an understanding of common adult doses of medications and respective contraindications.
20.0	Prepare and deliver medications--The student will be able to:	
	20.01	Read and prepare medication orders correctly.
	20.02	Design and evaluate pharmacy dispensing processes step-by-step in institutional practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors
	20.03	Check all new orders with medications listed on profiles while noting any discrepancies.
	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	Demonstrate the proper technique of preparing pharmaceutical compounds. .
	20.07	Demonstrate the ability to correctly fill and deliver medication cassettes.
	20.08	Collect data from medication administration record and drug use and evaluation form.
	20.09	Demonstrate use of automated medication dispensing equipment.
21.0	Prepackage unit dose medications--The student will be able to:	
	21.01	Locate correct stock container.
	21.02	Measure, count required individual doses of medication.
	21.03	Label with required information utilizing "tall man" lettering.
	21.04	Operate unit dose packaging equipment.
	21.05	Place individual dose in appropriate containers, re prepackage in predetermined quantities.
	21.06	Prepackage unit dose hazardous drugs.
	21.07	Record prepackaged medication data correctly.
	21.08	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prepackaging unit dose medication.

22.0		**Prepare sterile products --The student will be able to:**
	22.01	Convey an understanding of United States Pharmacopeia (USP) 797 regulations.
	22.02	Compare medication order with label on vial and check expiration date of product.
	22.03	Calculate drug dosage for parenteral use.
	22.04	Articulate common drug incompatibilities.
	22.05	Reconstitute parenteral medications.
	22.06	Use aseptic techniques to withdraw medication from stock vial measure correct quantity as instructed, select and insert it into IV solution without error.
	22.07	Use aseptic technique to withdraw medication from an ampule.
	22.08	Prepare parenteral solutions and discuss current intravenous preparation industry trends.
	22.09	Perform the preparation of total Parenteral Nutrition solutions.
	22.10	Perform the preparation of chemotherapeutic agents using proper safety techniques.
	22.11	Utilize the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.
	22.12	Place label on IV solution container and keep records.
	22.13	Perform quality control check.
	22.14	Convey an understanding of storage requirements of reconstituted IV solutions.
	22.15	Convey an understanding of the proper disposal of hazardous Drugs.
	22.16	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

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.).

The recommended student to instructor ratio in the classroom for this program is 15:1 and in the lab is 4:1. This recommendation is for the purpose of enhancing the safety and learning gains in the classroom and the lab.

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

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

Outcomes 01-11 are referred to as the Health 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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs 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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Emergency Medical Technician**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090400
Program Type	College Credit Certificate (CCC)
Program Length	11 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Emergency Medical Services AS degree program (1351090402).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

This is an instructional program that prepares students for employment as emergency medical technicians SOC Code 29-2041(Emergency Medical Technicians and Paramedics) to function at the basic pre-hospital emergency medical technician level and treat various medical/trauma conditions using appropriate equipment and materials. The program prepares students for certification as EMT's in accordance with Chapter 64J of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation (DOT) National EMS Education Standards for EMT. This is the initial level for a career in emergency medical services and the primary prerequisite for paramedic training and certification.

The content includes but is not limited to patient assessment, airway management, cardiac arrest, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, acute abdomen, communicable diseases, patients with abnormal behavior, alcohol and drug abuse, the unconscious state, emergency childbirth, burns, environmental hazards, communications,

reporting, extrication and transportation of patient. The student must be proficient in patient assessment and evaluation, the use of suctioning devices, oral and nasal airways, resuscitation devices, oxygen equipment, sphygmomanometer and stethoscope, splints of all types, pneumatic anti-shock garments, extrication tools, dressings and bandages, stretchers and patient carrying devices.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Apply fundamental knowledge of the anatomy and physiology of all human body systems to the practice of EMS.
13.0   Apply fundamental knowledge of life span development to patient assessment and management.
14.0   Describe the history and evolution of the EMS system.
15.0   Discuss and explain the roles, responsibilities and professionalism of EMS Personnel.
16.0   Discuss the significance of using the correct safety precautions to ensure the safety of the patient, the EMT and the EMS team.
17.0   Discuss stress management techniques useful for both the EMT and the patient.
18.0   Discuss the procedures to safely lift and move patients of various age groups and situations (emergency, Urgent and non-urgent moves).
19.0   Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team (taught to the level described in FS 401.2701).
20.0   Describe the principles of medical documentation and report writing.
21.0   Describe the components of the EMS Communication system.
22.0   Describe the significance of communication techniques for the EMT.
23.0   Discuss the medical, legal and ethical issues to the provision of emergency care.
24.0   Discuss the principles of pharmacology as they are related to emergency care.
25.0   Discuss and demonstrate scene size up and management in an emergency situation.
26.0   Discuss and demonstrate primary patient assessment procedures for all patient age levels.
27.0   Discuss and demonstrate the procedures for taking the history of a patient.
28.0   Discuss and demonstrate secondary patient assessment procedures for all patient age levels.
29.0   Describe the significance of monitoring devices in patient assessment.
30.0   Discuss the components and factors of reassessment and its significance in patient assessment.

31.0	Demonstrate an understanding and proficiency in Airway Management techniques
32.0	Demonstrate an understanding and proficiency in Respiration techniques.
33.0	Demonstrate an understanding and proficiency in Artificial Ventilation techniques.
34.0	Apply a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation.
35.0	Apply knowledge to provide care for patients with a neurological emergency.
36.0	Apply knowledge to provide care for patients with an Abdominal/Gastrointestinal emergency.
37.0	Apply knowledge to provide care for patients with an Immunologic emergency.
38.0	Apply knowledge to provide care for a patient experiencing an infectious disease.
39.0	Apply knowledge to provide care for a patient with an endocrine disorder.
40.0	Apply knowledge to provide care for a patient with a psychiatric emergency.
41.0	Apply knowledge to provide care for patients with a cardiovascular emergency.
42.0	Apply knowledge of toxicology to provide care for a patient with a poisoning or overdose emergency.
43.0	Apply knowledge to provide care for a patient with a respiratory emergency.
44.0	Apply knowledge of Hematology to provide care for patients with a clotting disorder or are experiencing a sickle cell disease crisis.
45.0	Apply knowledge to provide care for a patient with a genitourinary/renal emergency.
46.0	Apply knowledge to provide care for a patient with a gynecologic emergency.
47.0	Apply knowledge to provide care for a patient with a Non-Traumatic Musculoskeletal emergency.
48.0	Describe an overview of the identification, categorization, pathophysiology and assessment of a trauma patient.
49.0	Demonstrate an understanding and the skills required for the management of a patient with traumatic bleeding.
50.0	Demonstrate an understanding and the skills required for the management of a patient with a chest trauma.
51.0	Demonstrate an understanding and the skills required for the management of a patient with an abdominal/genitourinary trauma.
52.0	Demonstrate an understanding and the skills required for the management of a patient with an orthopedic trauma.
53.0	Demonstrate an understanding and the skills required for the management of a patient with a soft tissue trauma.
54.0	Demonstrate an understanding and the skills required for the management of a patient with a head, facial, or neck (non-spinal) trauma.
55.0	Demonstrate an understanding and the skills required for the management of a patient with a nervous system trauma.
56.0	Demonstrate an understanding of the special considerations for the management of a patient experiencing a trauma during pregnancy.
57.0	Demonstrate an understanding of the special considerations for the management of the pediatric patient experiencing a trauma.
58.0	Demonstrate an understanding of the special considerations for the management of the geriatric patient experiencing a trauma.
59.0	Demonstrate an understanding of the special considerations for the management of the cognitively impaired patient experiencing a trauma.
60.0	Discuss and demonstrate how to assess and manage environmental trauma emergencies.
61.0	Define and articulate the kinematics of trauma.
62.0	Describe the components and procedures of a multi-system trauma.
63.0	Apply knowledge of growth development, aging and assessment to the obstetric and neonatal populations.
64.0	Apply knowledge of growth development, aging and assessment to the pediatric population.
65.0	Apply knowledge of growth development, aging and assessment to the geriatric population.
66.0	Apply knowledge of growth development, aging and assessment to patients with special challenges.
67.0	Discuss and demonstrate the principles of safely operating a ground ambulance.
68.0	Discuss an overview of EMS operations during a multiples casualty incident.
69.0	Demonstrate knowledge and procedures involved in safely operating in and around an air medical operations landing zone.
70.0	Discuss correct procedures of extrication to ensure EMS personnel and patient safety during extrication operations.
71.0	Discuss the risks and responsibilities of operating during a terrorism event or during a natural or man-made disaster.

Florida Department of Education
Student Performance Standards

Program Title: **Emergency Medical Technician**
CIP Number: **0351090400**
Program Length: **11 credit hours**
SOC Code(s):   **29-2041**

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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:
Emergency Medical Technician: Intended outcomes 12-71 complete the occupational exit of EMT. The outcomes may be taught as one or more modules at the postsecondary level.
12.0   Apply fundamental knowledge of the anatomy and physiology of all human body systems to the practice of EMS – The students will be able to:
12.01   Label the following topographic terms: Medial, lateral, proximal, distal, superior, inferior, anterior, posterior, midline, right and left, mid-clavicular, bilateral, mid-axillary.
12.02   Describe& identify the anatomy and function of the following major body systems: Respiratory, circulatory, musculoskeletal, nervous, integumentary, digestive, urinary, genital and endocrine.
12.03   Define the medical terminology & medical terms associated with the EMT level.
12.04   Define Pathophysiology.
12.05   Chart the life support chain, aerobic metabolism and anaerobic metabolism.
13.0   Apply fundamental knowledge of life span development to patient assessment and management. – The students will be able to:

13.01	Understand the terms used to designate the following stages of life: infants, toddlers, preschoolers, school-age children, adolescents (teenagers), early adults, middle adults & late adults.	
13.02	Describe the major physiologic & psychosocial characteristics of:	
	13.02.01	An infant's life
	13.02.02	A toddler and preschooler's life
	13.02.03	A school age child's life
	13.02.04	An adolescent's life
	13.02.05	An early adults life
	13.02.06	A middle adult's life
	13.02.07	A late adult's life
14.0	**Describe the history and evolution of the EMS system. – The students will be able to:**	
14.01	Define Emergency Medical Services (EMS) systems.	
14.02	Discuss the historical background of the development of the EMS system.	
14.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT & PM) as well as the three levels in the State of Florida.	
14.04	State the specific statutes and regulations regarding the EMS system in Florida.	
15.0	**Discuss and explain the roles, responsibilities & professionalism of EMS Personnel – The students will be able to:**	
15.01	Discuss vehicle & equipment readiness	
15.02	Characterize the EMS system's role in prevention and public education.	
15.03	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.	
15.04	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient assessment and administer emergency care.	

15.05	Discuss the maintenance of certification & licensure for the EMT in the State of Florida and NREMT.
15.06	Define quality improvement and discuss the EMT's role in the process.
15.07	Discuss EMS research & evidence based decision making.
16.0	**Discuss the significance of using the correct safety precautions to ensure the safety of the patient, the EMT and the EMS team. – The students will be able to:**
16.01	Explain the need to determine scene safety.
16.02	Discuss the importance of body substance isolation (BSI).
16.03	Describe the steps the EMT should take for personal protection from airborne and blood borne pathogens as well as communicable disease.
16.04	List the personal protective equipment necessary to protect oneself in common emergency situations.
17.0	**Discuss stress management techniques useful for both the EMT and the patient. – The students will be able to:**
17.01	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
17.02	State the steps the EMT should take when approaching a family confronted with death and dying.
17.03	Recognize the warning signs of personal stress and discuss the strategies EMTs can apply to manage it.
18.0	**Discuss the procedures to safely lift and move patients of various age groups and situations (emergency, Urgent and non-urgent moves). – The students will be able to:**
18.01	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
18.02	Discuss the guidelines and safety precautions that need to be followed when lifting a patient.
18.03	Describe the guidelines and safety precautions for carrying patients and/or equipment.
18.04	State the guidelines for reaching and their application.
18.05	State the guidelines for pushing and pulling.

18.06	Discuss patient positioning in common emergency situations.
18.07	Discuss situation that may require the use of medical restraints on the patient & explain guidelines and safety consideration for their use.
19.0	Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team(taught to the level described in FS 401.2701) – The students will be able to:
19.01	Define "infectious disease" and "communicable disease."
19.02	Describe the routes of transmission for infectious disease.
19.03	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis & HIV.
19.04	Explain how immunity to infectious diseases is acquired.
19.05	Explain post exposure management of exposure to patient blood or body fluids, including completing a post exposure report.
19.06	Describe the components of physical fitness & mental wellbeing
20.0	Describe the principles of medical documentation and report writing. – The students will be able to:
20.01	Describe the use of written communication and documentation.
20.02	Explain the legal implication of the patient care report.
20.03	Identify the minimum dataset reference patient information and administrative information on the patient care report.
20.04	Understand how to document refusal of care, including legal implications.
21.0	Describe the components of the EMS Communication system. – The students will be able to:
21.01	Understand the basic principles of the various types of communications equipment used in EMS
21.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission
21.03	State the proper procedures and sequence for delivery of patient information to other healthcare professionals.
21.04	Identify the essential components of the verbal report and legal aspects that need to be considered.

22.0	Describe the significance of communication techniques for the EMT. – The students will be able to:
	22.01 Describe principles of therapeutic and effective communication with patients in a manner that achieves a positive relationship.
	22.02 Discuss adjusting communication strategies to effectively communicate to differing age groups, developmental stages, patients with special needs, and differing cultures, including language barriers.
	22.03 Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
23.0	Discuss the medical, legal and ethical issues to the provision of emergency care. – The students will be able to:
	23.01 Differentiate between expressed, implied and involuntary consent
	23.02 Discuss the methods of obtaining consent and procedures for minors.
	23.03 Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
	23.04 Discuss the implications for the EMT in patient refusal of care and/or transport.
	23.05 Explain the importance, necessity and legality of patient confidentiality.
	23.06 Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
	23.07 Discuss State of Florida & Federal special reporting situations such as abuse, sexual assault, gunshots & knife wounds, communicable disease, etc
	23.08 Differentiate between civil tort & criminal actions
	23.09 List the elements of negligence and defenses/protections from liability.
	23.10 Discuss the role of the EMT at crime scenes and preservation of evidence.
	23.11 Define ethics & morality and discuss their implication for the EMT.
24.0	Discuss the principles of pharmacology as they are related to emergency care. – The students will be able to:
	24.01 Explain the "six rights" of medication administration and describe how each one related to EMS.

	24.02	Discuss the forms in which the medications may be found and provide examples of each and discuss how the form of a medication dictates its route of administration.
	24.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
	24.04	Discuss the components and elements of a drug profile including, actions, contraindications, side effects, dose and route.
	24.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
	24.06	Give the generic and trade names, actions, indication, contraindications, routes of administration, side effects, interactions & doses of medications that may be administered by and EMT in an emergency as dictated by the State of Florida & local medical direction.
	24.07	Demonstrate how to administer medication in the following routes; oral, sublingual and auto-injector.
25.0	Discuss and demonstrate scene size up and management in an emergency situation. – The students will be able to:	
	25.01	Recognize and describe hazards/potential hazards at the scene.
	25.02	Determine if the scene is safe to enter.
	25.03	Discuss common mechanisms of injury/nature of illness.
	25.04	Discuss the procedures for multiple-patient situations.
	25.05	Explain why it is important for the EMT to determine the need for additional or specialized resources.
	25.06	List the minimum standard precautions that should be followed and PPE that should be worn at the emergency scene.
26.0	Discuss and demonstrate primary patient assessment procedures for all patient age levels. – The students will be able to:	
	26.01	Summarize the elements of a general impression of the patient.
	26.02	Discuss & demonstrate methods of assessing altered mental status using assess for level of consciousness (AVPU).
	26.03	Discuss & demonstrate methods of assessing the airway and providing airway care.
	26.04	Describe& demonstrate methods used for assessing if a patient is breathing
	26.05	Differentiate between a patient with adequate and inadequate breathing.

	26.06	Distinguish between methods of assessing breathing.
	26.07	Describe& demonstrate the methods used to obtain a pulse.
	26.08	Discuss & demonstrate the need for assessing the patient for external bleeding.
	26.09	Describe & demonstrate normal and abnormal findings when assessing skin color, temperature, moisture & capillary refill in the pediatric, adult and geriatric patient.
	26.10	Explain the reason for & demonstrate prioritizing a patient for care and transport.
27.0	Discuss and demonstrate the procedures for taking the history of a patient. – The students will be able to:	
	27.01	Discuss the process of taking a history, its key components and its relationship to the primary assessment process.
	27.02	Explain the importance of obtaining a SAMPLE & OPQRST history.
	27.03	Recognize and respond to the feelings patients experience during assessment.
	27.04	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
28.0	Discuss and demonstrate secondary patient assessment procedures for all patient age levels. – The students will be able to:	
	28.01	Describe the unique needs & demonstrate assessing an individual with a specific chief complaint with no known prior history.
	28.02	Discuss the components of the physical exam and skills involved.
	28.03	Differentiate between the history and physical exam that are performed for responsive patients with no known prior history, responsive patients with a known prior history and unresponsive patients.
29.0	Describe the significance of monitoring devices in patient assessment. – The students will be able to:	
	29.01	Explain and demonstrate the use and interpretation of pulse oximetry device readings.
	29.02	List normal blood pressure ranges for the pediatric, adult and geriatric patient.
	29.03	Demonstrate how to measure a blood pressure by palpation, auscultation and electronic devices while in the field.
30.0	Discuss the components and factors of reassessment and its significance in patient assessment. – The students will be able to:	

	30.01	Describe the components of the reassessment and demonstrate the skills involved.
	30.02	Discuss the reasons for repeating the initial assessment as part of the reassessment.
	30.03	Explain trending assessment components and its value to other health professionals who assume care of the patient.
31.0	Demonstrate an understanding and proficiency in Airway Management techniques – The students will be able to:	
	31.01	Name & label the structures of the respiratory system
	31.02	State what care should be provided for a patient with or without adequate breathing.
	31.03	Describe & demonstrate the steps in performing the head-tilt chin-lift.
	31.04	Relate mechanism of injury to opening the airway.
	31.05	Describe & demonstrate the steps in performing the jaw thrust.
	31.06	Describe& demonstrate the techniques of suctioning and its importance.
32.0	Demonstrate an understanding and proficiency in Respiration techniques. – The students will be able to:	
	32.01	Describe the pulmonary ventilation process to include mechanics of ventilation & alveolar ventilation (tidal volumes, dead space, etc)
	32.02	Describe the oxygenation process
	32.03	Explain both external & internal respiration process
	32.04	Discuss the various pathophysiologies of the respiratory system.
	32.05	Describe how to assess for adequate and inadequate respiration, including the use of pulse oximetry.
	32.06	List the components, purpose, indications, contraindications, complications and procedures for oxygen delivery devices.
	32.07	Demonstrate oxygen administration for the pediatric, adult and geriatric patient.
	32.08	Describe and demonstrate the steps in performing the skill of assisting ventilations in the conscious and unconscious patient in respiratory distress using a bag-valve-mask (BVM), and continuous positive airway pressure (CPAP).

33.0	Demonstrate an understanding and proficiency in Artificial Ventilation techniques. – The students will be able to:
	33.01 Demonstrate how to insert an oropharyngeal (oral), a nasopharyngeal (nasal) airway and a supraglottic airway.
	33.02 Describe & demonstrate how to artificially ventilate a patient with a pocket mask.
	33.03 Describe& demonstrate the steps in performing the skill of artificially ventilating a patient with a BVM for one or two rescuers.
	33.04 Describe & demonstrate the signs of adequate & inadequate artificial ventilation using the BVM.
	33.05 Describe & demonstrate the steps in artificially ventilating a patient with a manually triggered ventilation device.
	33.06 Demonstrate how to artificially ventilate the pediatric, adult and geriatric patient.
	33.07 Describe & demonstrate how to perform the Sellick maneuver (cricoid pressure).
	33.08 Recognize the differences between normal and positive pressure ventilation.
34.0	Apply a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation – The students will be able to:
	34.01 Discuss withholding resuscitation if irreversible death is obvious or if a "DO Not Resuscitate" (DNR) is present.
	34.02 Review the anatomy & physiology of the respiratory & cardiovascular systems
	34.03 Discuss, identify pathophysiologies & medical care for respiratory failure as well as respiratory and cardiac arrest.
	34.04 Explain the system components of CPR, the four links in the AHA chain of survival & how each one relates to maximizing the survival of the patient.
	34.05 Show Provider (AHA guidelines) certification required prior to EMT program admission as per FS 401.27.
	34.06 Understand shock, including the pathophysiology, causes, and its signs and symptoms associated with the various types of shock.
	34.07 Discuss patient assessment and steps to the emergency care of the patient with signs & symptoms of shock.
	34.08 Discuss and distinguish the variations & causes between the emergency medical care of the pediatric, adult and geriatric patient experiencing shock.
35.0	Apply knowledge to provide care for patients with a neurological emergency. – The students will be able to:

	35.01	Discuss & review the anatomy, physiology & pathophysiology of the brain & spinal cord
	35.02	Discuss & identify the causes of ischemic strokes, hemorrhagic strokes & transient ischemic attacks and their similarities & differences.
	35.03	Discuss & demonstrate how to use the stroke assessment tool accepted by the State of Florida to identify a stroke patient rapidly.
	35.04	Define and differentiate generalize seizure, partial seizure & status epilepticus and list their possible causes.
	35.05	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with neurological emergencies.
36.0	Apply knowledge to provide care for patients with an Abdominal/Gastrointestinal emergency. – The students will be able to:	
	36.01	Discuss and review the basic anatomy physiology & pathophysiology of the gastrointestinal, genital & urinary systems.
	36.02	Define the term," acute abdomen."
	36.03	Identify the signs & symptoms, and common causes of an acute abdomen.
	36.04	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with gastrointestinal emergencies.
37.0	Apply knowledge to provide care for patients with an Immunologic emergency. – The students will be able to:	
	37.01	Understand and define the terms allergic reaction and anaphylaxis
	37.02	Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an allergic reaction.
	37.03	State the generic and trade names, medication forms, dose, administration, action, and contraindications for the epinephrine auto-injector.
	37.04	Demonstrate the use of epinephrine auto-injector
38.0	Apply knowledge to provide care for a patient experiencing an infectious disease. – The students will be able to:	
	38.01	List the causes of infectious diseases
	38.02	Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an infectious disease.
	38.03	Discuss mandatory notification to State or Federal agencies of various diseases.

39.0	Apply knowledge to provide care for a patient with an endocrine disorder. – The students will be able to:	
	39.01	Review the anatomy, physiology & pathophysiology of the endocrine system and its main function in the body.
	39.02	Define diabetes (type I & II), Hypoglycemia, Hyperglycemia & diabetic ketoacidosis.
	39.03	Identify & demonstrate the steps in the emergency medical care of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
	39.04	State the generic and trade names, medication forms, dose, administration, action, and contraindications for oral glucose.
	39.05	Demonstrate the steps of using a glucometer device and administering oral glucose.
	39.06	Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a diabetic emergency.
40.0	Apply knowledge to provide care for a patient with a psychiatric emergency. – The students will be able to:	
	40.01	Define behavior, psychiatric disorders & behavioral emergencies.
	40.02	Discuss the general factors that may cause an alteration in a patient's behavior.
	40.03	Discuss the risk factors/signs or symptoms of various psychiatric emergencies.
	40.04	Discuss special medical/legal considerations for managing behavioral emergencies to include Florida statues:
		40.04.01 Baker Act (FS 394.451)
		40.04.02 Marchman Act (FS 397.601 & FS 397.675)
		40.04.03 Emergency examination & treatment of incapacitated (FS401.445)
	40.05	Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a behavioral or psychiatric emergency.
	40.06	Demonstrate various techniques to safely restrain a patient with a behavioral problem.
41.0	Apply knowledge to provide care for patients with a cardiovascular emergency. – The students will be able to:	
	41.01	Review the basic anatomy, physiology and pathophysiology of the cardiovascular system.

41.02	Describe the anatomy, physiology, pathophysiology and demonstrate the assessment & management of :	
	41.02.01	Angina pectoris
	41.02.02	Thromboembolism
	41.02.03	Myocardial infarction
	41.02.04	Hypertensive emergencies
	41.02.05	Aortic aneurysm/dissection
	41.02.06	Heart Failure
41.03	Demonstrate the ability to assess and treat a patient with signs and symptoms of cardiac issues, including airway, medication administration, position of comfort and life span considerations.	
41.04	List the indications & contraindications for automated external defibrillation (AED).	
41.05	Explain the impact of age and weight on defibrillation.	
41.06	Discuss the position of comfort for patients with various cardiac emergencies.	
41.07	Explain the rationale for early defibrillation.	
41.08	Explain that not all chest pain patients result in cardiac arrest and do not need to be attached to an automated external defibrillator.	
41.09	Discuss the various types of automated external defibrillators.	
41.10	Differentiate between the fully automated and the semi-automated defibrillator.	
41.11	Understand the importance of maintenance and operators check list for AED's.	
41.12	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.	
41.13	Explain the role medical direction plays in the use of automated external defibrillation.	
42.0	Apply knowledge of toxicology to provide care for a patient with a poisoning or overdose emergency. – The students will be able to:	
	42.01 Define toxicology, poisoning & overdose.	

	42.02	List various ways that poisons enter the body.
	42.03	List signs/symptoms associated with poisoning.
	42.04	Discuss & demonstrate the emergency medical care for the pediatric, adult and geriatric patient with poisoning or overdose.
	42.05	State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects and re-assessment strategies for activated charcoal.
	42.06	Perform the necessary steps required to provide a patient with activated charcoal.
43.0	Apply knowledge to provide care for a patient with a respiratory emergency. – The students will be able to:	
	43.01	List the structure, function and pathophysiology of the respiratory system.
	43.02	List signs of adequate air exchange.
	43.03	State the signs and symptoms of a patient with respiratory distress.
	43.04	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with a respiratory emergency.
	43.05	State the generic name, medication forms, dose, administration, action, indications and contraindications for the metered-dose inhaler.
	43.06	Demonstrate the steps in facilitating the use of an inhaler.
	43.07	Differentiate between upper airway obstruction and lower airway disease in the pediatric, adult and geriatric patient.
44.0	Apply knowledge of Hematology to provide care for patients with a clotting disorder or are experiencing a sickle cell disease crisis. – The students will be able to:	
	44.01	List the composition, physiology & pathophysiology of blood.
	44.02	State the signs and symptoms of a patient with a Sickle Cell crisis or a clotting disorder.
	44.03	Describe & demonstrate the emergency medical care of the patient with Sickle cell distress or clotting disorder.
45.0	Apply knowledge to provide care for a patient with a genitourinary/renal emergency. – The students will be able to:	
	45.01	List the anatomy, physiology & pathophysiology of the renal system.

	45.02	Understand the principles of kidney dialysis.
	45.03	State the signs and symptoms of a patient with a dialysis emergency.
	45.04	Describe & demonstrate the emergency medical care of the patient with a dialysis emergency.
46.0	Apply knowledge to provide care for a patient with a gynecologic emergency. – The students will be able to:	
	46.01	Describe the basic anatomy, physiology and pathophysiology of the female reproductive system.
	46.02	Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a female reproductive system emergency.
	46.03	Explain the general management of a gynecologic emergency in relation to patient privacy and communication.
	46.04	Discuss the special consideration and precautions an EMT must observe when arriving at the scene of a suspected case of sexual assault or rape.
47.0	Apply knowledge to provide care for a patient with a Non-Traumatic Musculoskeletal emergency. – The students will be able to:	
	47.01	Describe the basic anatomy, physiology and pathophysiology of the skeletal system (i.e. cancer or osteoporosis).
	47.02	Describe & demonstrate the emergency medical care of the patient with a non-traumatic musculoskeletal emergency.
48.0	Describe an overview of the identification, categorization, pathophysiology and assessment of a trauma patient. – The students will be able to:	
	48.01	Discuss and define pathophysiology of the trauma patient
	48.02	Discuss and demonstrate assessment and management of the trauma patient.
	48.03	Discuss and describe significant & non-significant Mechanism of Injury (MOI) & provide examples of each.
	48.04	Discuss and describe State of Florida's trauma scorecard methodologies as required in FS 401.2701 & 64J-2.004 & 2.005.
	48.05	Discuss the National Trauma Triage Protocol of injured Patients (http://cdc.gov/fieldtriage/)
49.0	Demonstrate an understanding and the skills required for the management of a patient with traumatic bleeding. – The students will be able to:	

49.01	Review the anatomy & physiology of the circulatory system
49.02	Differentiate between:
	49.02.01 Internal and external bleeding.
	49.02.02 Arterial, venous and capillary bleeding.
49.03	Explain and demonstrate emergency medical care of the patient with external & internal bleeding.
49.04	List signs and symptoms of shock (hypo-perfusion).
50.0	Demonstrate an understanding and the skills required for the management of a patient with a chest trauma. – The students will be able to:
50.01	Discuss MOI for chest injury (blunt & penetrating, energy & injury).
50.02	List the anatomy, physiology & pathophysiology of the thoracic/chest cavity & respiratory system.
50.03	Differentiate between a pneumothorax (open, simple & tension) & hemothorax.
50.04	Describe and demonstrate the assessment & management of a patient with a suspected chest (open and closed) injury.
51.0	Demonstrate an understanding and the skills required for the management of a patient with an abdominal/genitourinary trauma. – The students will be able to:
51.01	Discuss MOI for abdominal injury (blunt & penetrating, energy & injury).
51.02	List the anatomy, physiology & pathophysiology of the abdominal cavity & genitourinary (both male & female) system.
51.03	Describe the abdominal quadrants
51.04	Describe the differences between hollow & solid organs.
51.05	Describe and demonstrate the assessment & management of a patient with a suspected abdominal (penetrating or blunt) or genitourinary injury.
51.06	Explain special consideration related to a patient who has experienced an injury by sexual assault/abuse.
52.0	Demonstrate an understanding and the skills required for the management of a patient with an orthopedic trauma. – The students will be able to:

	52.01	Discuss MOI for orthopedic injury (blunt & penetrating, energy & injury).
	52.02	Review the anatomy, physiology & pathophysiology of the musculoskeletal system.
	52.03	Describe the different types of musculoskeletal injuries including fractures, amputations, sprains, & strains.
	52.04	Differentiate between an open and a closed painful, swollen, deformed extremity.
	52.05	Describe and demonstrate the assessment & management of a patient with a suspected orthopedic injury.
53.0	Demonstrate an understanding and the skills required for the management of a patient with a soft tissue trauma. – The students will be able to:	
	53.01	Discuss & list the anatomy and physiology, to include the layers, of the skin.
	53.02	Discuss and list the types of open & closed soft tissue injury.
	53.03	Define and list characteristics of superficial, partial-thickness and full-thickness burns.
	53.04	Explain how the seriousness of a burn is related to its depth and extent (percent of body surface area (BSA) involved or rule of 9s) for adult & pediatric patient.
	53.05	Describe and demonstrate the assessment & management of a patient with a soft tissue injury.
54.0	Demonstrate an understanding and the skills required for the management of a patient with a head, facial, or neck (non-spinal) trauma. – The students will be able to:	
	54.01	List the anatomy, physiology & pathophysiology of the head, face, & neck.
	54.02	Discuss MOI for head, face, & neck (non-spinal) (blunt & penetrating, energy & injury).
	54.03	Describe and demonstrate the assessment & management of a patient with an injury to the head, face & neck (non-spinal).
55.0	Demonstrate an understanding and the skills required for the management of a patient with a nervous system trauma. – The students will be able to:	
	55.01	Review the anatomy, physiology & pathophysiology of the nervous system.
	55.02	Explain functions of the somatic & autonomic nervous system

	55.03	Discuss MOI for head (brain) & spinal (blunt & penetrating, energy & injury).
	55.04	Discuss the different types of brain injuries and their corresponding signs and symptoms, including increased intracranial pressure (ICP), concussion, contusion & injuries caused my medical conditions.
	55.05	Describe and demonstrate the assessment & management of a patient with a head (brain) and spinal injury.
56.0	Demonstrate an understanding of the special considerations for the management of a patient experiencing a trauma during pregnancy. – The students will be able to:	
	56.01	Discuss Anatomy, physiology & pathophysiology of the pregnant trauma patient.
	56.02	Discuss MOI and fetal considerations for the pregnant trauma patient.
	56.03	Discuss & demonstrate unique injuries and conditions along with assessment & management for the pregnant patient involved in trauma.
57.0	Demonstrate an understanding of the special considerations for the management of the pediatric patient experiencing a trauma. – The students will be able to:	
	57.01	Discuss Anatomy, physiology & pathophysiology of the pediatric trauma patient.
	57.02	Discuss & demonstrate unique assessment & management considerations for the pediatric trauma patient.
58.0	Demonstrate an understanding of the special considerations for the management of the geriatric patient experiencing a trauma. – The students will be able to:	
	58.01	Discuss Anatomy, physiology & pathophysiology of the elderly trauma patient.
	58.02	Discuss & demonstrate unique assessment & management considerations for the elderly trauma patient.
59.0	Demonstrate an understanding of the special considerations for the management of the cognitively impaired patient experiencing a trauma. – The students will be able to:	
	59.01	Discuss anatomy, physiology & pathophysiology of the cognitively impaired trauma patient.
	59.02	Discuss & demonstrate unique assessment & management considerations for the cognitively impaired trauma patient.
60.0	Discuss and demonstrate how to assess and manage environmental trauma emergencies. – The students will be able to:	

60.01	Define drowning and discuss its incidence, rick factors & prevention.	
60.02	List pathophysiologies of water related incidents	
60.03	Describe submersion in salt and fresh water	
60.04	Discuss & demonstrate assessment & management considerations for a patient of a submersion incident.	
60.05	Describe the different types of diving emergencies and how they may occur.	
60.06	List pathophysiologies of dysbarism incidents to include high altitudes and diving incidents.	
60.07	Discuss & demonstrate assessment & management considerations for a patient of a dysbarism incident.	
60.08	Discuss & demonstrate assessment & management considerations for a patient of a lightning incident	
60.09	Explain the five ways a body can lose heat	
60.10	List pathophysiologies of temperature related incidents to include both cold and heat related illness.	
60.11	Discuss & demonstrate assessment & management considerations for a patient of a temperature related illness	
60.12	Identify the species of insects, spiders & snakes in the US that may cause life threatening injuries.	
60.13	Discuss & demonstrate assessment & management considerations for a patient of a bite or envenomation incident.	
61.0	Define and articulate the kinematics of trauma. – The students will be able to:	
61.01	Explain the relationship between mechanism of injury and potential energy, kinetic energy and work.	
61.02	Define term blunt & penetrating trauma and provide examples of the mechanism of injury (MOI) that would cause each to occur and include:	
	61.02.01	Affects of high, medium & low velocity penetrating trauma
	61.02.02	Primary, secondary, tertiary and miscellaneous blast injuries
	61.02.03	Factors to consider of a patient injured in a fall
	61.02.04	Consider age (the pediatric, adult and geriatric patient)

62.0	Describe the components and procedures of a multi-system trauma. – The students will be able to:	
	62.01	Describe and provide a general overview of multisystem trauma patient management.
	62.02	Discuss the golden principle of out-of-hospital trauma care
	62.03	Discuss & demonstrate assessment & management considerations for a patient of multi system injuries.
63.0	Apply knowledge of growth development, aging and assessment to the obstetric and neonatal populations. – The students will be able to:	
	63.01	Review the anatomy, physiology & pathophysiology of the female reproductive system.
	63.02	Explain the normal changes that occur during pregnancy.
	63.03	Differentiate between the stages of labor and delivery.
	63.04	Discuss & demonstrate assessment & management considerations of a pregnancy
	63.05	Discuss assessment & management considerations of complications of pregnancy.
	63.06	Discuss & demonstrate assessment & management considerations of a neonate.
64.0	Apply knowledge of growth development, aging and assessment to the pediatric population. – The students will be able to:	
	64.01	List the anatomy, physiology & pathophysiology of the pediatric patient.
	64.02	Describe the differences in anatomy when compared to the adult patient to
	64.03	Discuss & demonstrate assessment & management considerations of a pediatric emergency.
	64.04	The most common causes of the following conditions in the pediatric patient.
		64.04.01 Shock
		64.04.02 Altered mental status and seizures
		64.04.03 Gastrointestinal emergencies
		64.04.04 Poisonings
		64.04.05 Drowning

	64.04.06 Trauma
	64.05 Discuss & demonstrate assessment & management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
65.0	**Apply knowledge of growth development, aging and assessment to the geriatric population. – The students will be able to:**
	65.01 Define and discuss the term "geriatrics."
	65.02 List the anatomy, physiology & pathophysiology of the Geriatric patient.
	65.03 Discuss & demonstrate assessment & management considerations of a geriatric emergency.
66.0	**Apply knowledge of growth development, aging and assessment to patients with special challenges. – The students will be able to:**
	66.01 Define and discuss child and elder abuse and neglect and possible indicators of each.
	66.02 Discuss assessment & management considerations of a patient with special needs to include child and elder abuse and neglect, homelessness/poverty, etc.
67.0	**Discuss and demonstrate the principles of safely operating a ground ambulance. – The students will be able to:**
	67.01 Discuss the importance of performing regular vehicle & equipment inspection.
	67.02 Describe the general provisions of Florida laws relating to the operation of the ambulance and privileges.
	67.03 Discuss "Due Regard for Safety of All Others" while operating an emergency vehicle.
	67.04 Provide examples of some high risk situations and hazards that may affect the safety of the ambulance and its passengers during both pre-transport & transport.
68.0	**Discuss an overview of EMS operations during a multiples casualty incident. – The students will be able to:**
	68.01 Describe the specific condition that would define a mass-casualty incident (MCI) and give examples.
	68.02 Describe primary and secondary triage, how the four triage categories are assigned and how destination decisions are made.
	68.03 Describe how the techniques of triage are performed.
	68.04 Demonstrate how to perform a triage based scenario that involves an MCI.
69.0	**Demonstrate knowledge and procedures involved in safely operating in and around an air medical operations landing zone. – The students**

	will be able to:	
	69.01	Discuss safe air medical operations
	69.02	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
	69.03	Discuss the criteria for utilizing an air medial response
70.0	Discuss correct procedures of extrication to ensure EMS personnel and patient safety during extrication operations. – The students will be able to:	
	70.01	Describe the role of the EMT in patient rescue & vehicle extrication
	70.02	Describe personal and patient safety during vehicle extrication.
	70.03	Discuss the factors related to ensuring situational safety at the site of a vehicle extrication
	70.04	Explain the difference between simple access and complex access in vehicle extrication
	70.05	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
71.0	Discuss the risks and responsibilities of operating during a terrorism event or during a natural or man-made disaster. – The students will be able to:	
	71.01	Describe the role of the EMT on the scene of a natural or man-made disaster
	71.02	Define the term international terrorism & domestic terrorism and provide examples of incidents of each.
	71.03	Describe personal & patient safety during a natural or man-made disaster.
	71.04	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.

<div align="center">**Additional Information**</div>

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.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6. Hospital activity shall include a minimum of 20 hours of supervised clinical supervision, including 10 hrs in a hospital emergency department. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

Field Internship Activities: Field internship shall include a competency based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include a minimum of 5 emergency runs resulting in patient care and transport appropriate for the EMT. In addition, the patient care components should include minimum competencies in patient assessment, airway management and ventilation, trauma and medical emergencies.

Special Notes

This program meets the Department of Health trauma score card methodologies and SUIDS training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. Programs may also teach domestic violence and prevention of medical errors education and may choose to provide a certificate to the student verifying that this education has been completed.

Please refer to chapter 401 F.S. for more information on disqualification for the EMT license through the Office of Emergency Medical Services (EMS), Department of Health.

An EMT program must be taught by an instructor meeting the qualifications as set forth in 64J-1.201 FAC.

An American Heart Association or Red Cross certification or equivalent in "professional" BLS is required of all candidates for entrance into an EMT program.

The standard length of this program is 250 clock hours or 11 credit hours. This includes the Health Careers Core (90 clock hours).

The Student Performance Standards for Emergency Medical Technology-EMT were adapted and condensed from the US Department of Transportation (DOT) National EMS Educational Standards for EMT.

The standard length of the program is 11 credit hours or 250 clock hours, which includes 90 hours for the core.

Minimum entrance requirements for this program include a high school diploma or GED unless high school students are dual enrolled. If dual enrolled, students must have the HS diploma or GED and meet the requirements to sit for the national certification examination.

Once the students have successfully completed the EMT Program, they may be given a certificate stating that they have met all Emergency Medical Responder requirements.

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 will be 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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Emergency Medical Technician -ATD**
Program Type: **ATD (Applied Technology Diploma)**
Career Cluster: **Health Science**

	CC	PSAV
Program Number	N/A	W170208
CIP Number	0351090403	0351090404
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	11 credit hours	250 clock hours
CTSO	HOSA: Future Health Professionals	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics 31-9099 Healthcare Support Workers, All Other	29-2041 Emergency Medical Technicians and Paramedics 31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	N/A	

Purpose

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

This is an instructional program that prepares students for employment as emergency medical technicians SOC Code 29-2041 (Emergency Medical Technicians and Paramedics) to function at the basic pre-hospital emergency medical technician level and treat various medical/trauma conditions using appropriate equipment and materials. The program prepares students for certification as EMT's in accordance with Chapter 64J of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation (DOT) National EMS Education Standards for EMT. This is the initial level for a career in emergency medical services and the primary prerequisite for paramedic training and certification.

The content includes but is not limited to patient assessment, airway management, cardiac arrest, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, acute abdomen, communicable diseases, patients with

abnormal behavior, alcohol and drug abuse, the unconscious state, emergency childbirth, burns, environmental hazards, communications, reporting, extrication and transportation of patient. The student must be proficient in patient assessment and evaluation, the use of suctioning devices, oral and nasal airways, resuscitation devices, oxygen equipment, sphygmomanometer and stethoscope, splints of all types, pneumatic anti-shock garments, extrication tools, dressings and bandages, stretchers and patient carrying devices.

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

Program Structure

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV 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	EMS0159	Emergency Medical Technician	160 hours	29-2041

College Credit

When offered at the community college level, this ATD program is part of the Emergency Medical Services (1351090402/0351090402) and has a program length of 11 credits.

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.

09.0 Demonstrate employability skills.
10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0 Apply basic math and science skills.
12.0 Apply fundamental knowledge of the anatomy and physiology of all human body systems to the practice of EMS.
13.0 Apply fundamental knowledge of life span development to patient assessment and management.
14.0 Describe the history and evolution of the EMS system.
15.0 Discuss and explain the roles, responsibilities & professionalism of EMS Personnel.
16.0 Discuss the significance of using the correct safety precautions to ensure the safety of the patient, the EMT and the EMS team.
17.0 Discuss stress management techniques useful for both the EMT and the patient.
18.0 Discuss the procedures to safely lift and move patients of various age groups and situations (emergency, urgent and non-urgent moves).
19.0 Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team (taught to the level described in FS 401.2701).
20.0 Describe the principles of medical documentation and report writing.
21.0 Describe the components of the EMS Communication system.
22.0 Describe the significance of communication techniques for the EMT.
23.0 Discuss the medical, legal and ethical issues to the provision of emergency care.
24.0 Discuss the principles of pharmacology as they are related to emergency care.
25.0 Discuss and demonstrate scene size up and management in an emergency situation.
26.0 Discuss and demonstrate primary patient assessment procedures for all patient age levels.
27.0 Discuss and demonstrate the procedures for taking the history of a patient.
28.0 Discuss and demonstrate secondary patient assessment procedures for all patient age levels.
29.0 Describe the significance of monitoring devices in patient assessment.
30.0 Discuss the components and factors of reassessment and its significance in patient assessment.
31.0 Demonstrate an understanding and proficiency in Airway Management techniques.
32.0 Demonstrate an understanding and proficiency in Respiration techniques.
33.0 Demonstrate an understanding and proficiency in Artificial Ventilation techniques.
34.0 Apply a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation.
35.0 Apply knowledge to provide care for patients with a neurological emergency.
36.0 Apply knowledge to provide care for patients with an Abdominal/Gastrointestinal emergency.
37.0 Apply knowledge to provide care for patients with an Immunologic emergency.
38.0 Apply knowledge to provide care for a patient experiencing an infectious disease.
39.0 Apply knowledge to provide care for a patient with an endocrine disorder.
40.0 Apply knowledge to provide care for a patient with a psychiatric emergency.
41.0 Apply knowledge to provide care for patients with a cardiovascular emergency.
42.0 Apply Knowledge of toxicology to provide care for a patient with a poisoning or overdose emergency.
43.0 Apply knowledge to provide care for a patient with a respiratory emergency.
44.0 Apply knowledge of Hematology to provide care for patients with a clotting disorder or are experiencing a sickle cell disease crisis.
45.0 Apply knowledge to provide care for a patient with a genitourinary/renal emergency.
46.0 Apply knowledge to provide care for a patient with a gynecologic emergency.
47.0 Apply knowledge to provide care for a patient with a Non-Traumatic Musculoskeletal emergency.
48.0 Describe an overview of the identification, categorization, pathophysiology and assessment of a trauma patient.

49.0   Demonstrate an understanding and the skills required for the management of a patient with traumatic bleeding.
50.0   Demonstrate an understanding and the skills required for the management of a patient with a chest trauma.
51.0   Demonstrate an understanding and the skills required for the management of a patient with an abdominal/genitourinary trauma.
52.0   Demonstrate an understanding and the skills required for the management of a patient with an orthopedic trauma.
53.0   Demonstrate an understanding and the skills required for the management of a patient with a soft tissue trauma.
54.0   Demonstrate an understanding and the skills required for the management of a patient with a head, facial, or neck (non-spinal) trauma.
55.0   Demonstrate an understanding and the skills required for the management of a patient with a nervous system trauma.
56.0   Demonstrate an understanding of the special considerations for the management of a patient experiencing a trauma during pregnancy.
57.0   Demonstrate an understanding of the special considerations for the management of the pediatric patient experiencing a trauma.
58.0   Demonstrate an understanding of the special considerations for the management of the geriatric patient experiencing a trauma.
59.0   Demonstrate an understanding of the special considerations for the management of the cognitively impaired patient experiencing a trauma.
60.0   Discuss and demonstrate how to assess and manage environmental trauma emergencies.
61.0   Define and articulate the kinematics of trauma.
62.0   Describe the components and procedures of a multi-system trauma.
63.0   Apply knowledge of growth development, aging and assessment to the obstetric and neonatal populations.
64.0   Apply knowledge of growth development, aging and assessment to the pediatric population.
65.0   Apply knowledge of growth development, aging and assessment to the geriatric population.
66.0   Apply knowledge of growth development, aging and assessment to patients with special challenges.
67.0   Discuss and demonstrate the principles of safely operating a ground ambulance.
68.0   Discuss an overview of EMS operations during a multiples casualty incident.
69.0   Demonstrate knowledge and procedures involved in safely operating in and around an air medical operations landing zone.
70.0   Discuss correct procedures of extrication to ensure EMS personnel and patient safety during extrication operations.
71.0   Discuss the risks and responsibilities of operating during a terrorism event or during a natural or man-made disaster.

Florida Department of Education
Student Performance Standards

Program Title: **Emergency Medical Technician**
PSAV Number: **W170208**

When this program is offered at the PSAV 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 PSAV health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

PSAV Course Number: HSC0003
Occupational Completion Point: A
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

PSAV Course Number: EMS0159
Occupational Completion Point: B
Emergency Medical Technician – 160 Hours – SOC Code 29-2041

12.0		Apply fundamental knowledge of the anatomy and physiology of all human body systems to the practice of EMS – The students will be able to:
	12.01	Label the following topographic terms: Medial, lateral, proximal, distal, superior, inferior, anterior, posterior, midline, right and left, mid-clavicular, bilateral, mid-axillary.
	12.02	Describe& identify the anatomy and function of the following major body systems: Respiratory, circulatory, musculoskeletal, nervous, integumentary, digestive, urinary, genital and endocrine.
	12.03	Define the medical terminology & medical terms associated with the EMT level.
	12.04	Define Pathophysiology.
	12.05	Chart the life support chain, aerobic metabolism and anaerobic metabolism.

13.0	**Apply fundamental knowledge of life span development to patient assessment and management. – The students will be able to:**	
	13.01	Understand the terms used to designate the following stages of life: infants, toddlers, preschoolers, school-age children, adolescents (teenagers), early adults, middle adults & late adults.
	13.02	Describe the major physiologic & psychosocial characteristics of:
		13.02.01 An infant's life
		13.02.02 A toddler and preschooler's life
		13.02.03 A school age child's life
		13.02.04 An adolescent's life
		13.02.05 An early adults life
		13.02.06 A middle adult's life
		13.02.07 A late adult's life
14.0	**Describe the history and evolution of the EMS system. – The students will be able to:**	
	14.01	Define Emergency Medical Services (EMS) systems.
	14.02	Discuss the historical background of the development of the EMS system.
	14.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT & PM) as well as the three levels in the State of Florida.
	14.04	State the specific statutes and regulations regarding the EMS system in Florida.
15.0	**Discuss and explain the roles, responsibilities & professionalism of EMS Personnel – The students will be able to:**	
	15.01	Discuss vehicle & equipment readiness
	15.02	Characterize the EMS system's role in prevention and public education.
	15.03	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
	15.04	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient

		assessment and administer emergency care.
	15.05	Discuss the maintenance of certification & licensure for the EMT in the State of Florida and NREMT.
	15.06	Define quality improvement and discuss the EMT's role in the process.
	15.07	Discuss EMS research & evidence based decision making.
16.0		Discuss the significance of using the correct safety precautions to ensure the safety of the patient, the EMT and the EMS team. – The students will be able to:
	16.01	Explain the need to determine scene safety.
	16.02	Discuss the importance of body substance isolation (BSI).
	16.03	Describe the steps the EMT should take for personal protection from airborne and blood borne pathogens as well as communicable disease.
	16.04	List the personal protective equipment necessary to protect oneself in common emergency situations.
17.0		Discuss stress management techniques useful for both the EMT and the patient. – The students will be able to:
	17.01	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
	17.02	State the steps the EMT should take when approaching a family confronted with death and dying.
	17.03	Recognize the warning signs of personal stress and discuss the strategies EMTs can apply to manage it.
18.0		Discuss the procedures to safely lift and move patients of various age groups and situations (emergency, Urgent and non-urgent moves). – The students will be able to:
	18.01	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
	18.02	Discuss the guidelines and safety precautions that need to be followed when lifting a patient.
	18.03	Describe the guidelines and safety precautions for carrying patients and/or equipment.
	18.04	State the guidelines for reaching and their application.

18.05	State the guidelines for pushing and pulling.
18.06	Discuss patient positioning in common emergency situations.
18.07	Discuss situation that may require the use of medical restraints on the patient & explain guidelines and safety consideration for their use.
19.0	**Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team(taught to the level described in FS 401.2701) – The students will be able to:**
19.01	Define "infectious disease" and "communicable disease."
19.02	Describe the routes of transmission for infectious disease.
19.03	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis & HIV.
19.04	Explain how immunity to infectious diseases is acquired.
19.05	Explain post exposure management of exposure to patient blood or body fluids, including completing a post exposure report.
19.06	Describe the components of physical fitness & mental wellbeing
20.0	**Describe the principles of medical documentation and report writing. – The students will be able to:**
20.01	Describe the use of written communication and documentation.
20.02	Explain the legal implication of the patient care report.
20.03	Identify the minimum dataset reference patient information and administrative information on the patient care report.
20.04	Understand how to document refusal of care, including legal implications.
21.0	**Describe the components of the EMS Communication system. – The students will be able to:**
21.01	Understand the basic principles of the various types of communications equipment used in EMS
21.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission
21.03	State the proper procedures and sequence for delivery of patient information to other healthcare professionals.

	21.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
22.0	**Describe the significance of communication techniques for the EMT. – The students will be able to:**	
	22.01	Describe principles of therapeutic and effective communication with patients in a manner that achieves a positive relationship.
	22.02	Discuss adjusting communication strategies to effectively communicate to differing age groups, developmental stages, patients with special needs, and differing cultures, including language barriers.
	22.03	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
23.0	**Discuss the medical, legal and ethical issues to the provision of emergency care. – The students will be able to:**	
	23.01	Differentiate between expressed, implied and involuntary consent
	23.02	Discuss the methods of obtaining consent and procedures for minors.
	23.03	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
	23.04	Discuss the implications for the EMT in patient refusal of care and/or transport.
	23.05	Explain the importance, necessity and legality of patient confidentiality.
	23.06	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
	23.07	Discuss State of Florida & Federal special reporting situations such as abuse, sexual assault, gunshots & knife wounds, communicable disease, etc
	23.08	Differentiate between civil tort & criminal actions
	23.09	List the elements of negligence and defenses/protections from liability.
	23.10	Discuss the role of the EMT at crime scenes and preservation of evidence.
	23.11	Define ethics & morality and discuss their implication for the EMT.
24.0	**Discuss the principles of pharmacology as they are related to emergency care. – The students will be able to:**	

	24.01	Explain the "six rights" of medication administration and describe how each one related to EMS.
	24.02	Discuss the forms in which the medications may be found and provide examples of each and discuss how the form of a medication dictates its route of administration.
	24.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
	24.04	Discuss the components and elements of a drug profile including, actions, contraindications, side effects, dose and route.
	24.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
	24.06	Give the generic and trade names, actions, indication, contraindications, routes of administration, side effects, interactions & doses of medications that may be administered by and EMT in an emergency as dictated by the State of Florida & local medical direction.
	24.07	Demonstrate how to administer medication in the following routes; oral, sublingual and auto-injector.
25.0	Discuss and demonstrate scene size up and management in an emergency situation. – The students will be able to:	
	25.01	Recognize and describe hazards/potential hazards at the scene.
	25.02	Determine if the scene is safe to enter.
	25.03	Discuss common mechanisms of injury/nature of illness.
	25.04	Discuss the procedures for multiple-patient situations.
	25.05	Explain why it is important for the EMT to determine the need for additional or specialized resources.
	25.06	List the minimum standard precautions that should be followed and PPE that should be worn at the emergency scene.
26.0	Discuss and demonstrate primary patient assessment procedures for all patient age levels. – The students will be able to:	
	26.01	Summarize the elements of a general impression of the patient.
	26.02	Discuss & demonstrate methods of assessing altered mental status using assess for level of consciousness (AVPU).
	26.03	Discuss & demonstrate methods of assessing the airway and providing airway care.
	26.04	Describe& demonstrate methods used for assessing if a patient is breathing

	26.05	Differentiate between a patient with adequate and inadequate breathing.
	26.06	Distinguish between methods of assessing breathing.
	26.07	Describe& demonstrate the methods used to obtain a pulse.
	26.08	Discuss & demonstrate the need for assessing the patient for external bleeding.
	26.09	Describe & demonstrate normal and abnormal findings when assessing skin color, temperature, moisture & capillary refill in the pediatric, adult and geriatric patient.
	26.10	Explain the reason for & demonstrate prioritizing a patient for care and transport.
27.0	Discuss and demonstrate the procedures for taking the history of a patient. – The students will be able to:	
	27.01	Discuss the process of taking a history, its key components and its relationship to the primary assessment process.
	27.02	Explain the importance of obtaining a SAMPLE & OPQRST history.
	27.03	Recognize and respond to the feelings patients experience during assessment.
	27.04	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
28.0	Discuss and demonstrate secondary patient assessment procedures for all patient age levels. – The students will be able to:	
	28.01	Describe the unique needs & demonstrate assessing an individual with a specific chief complaint with no known prior history.
	28.02	Discuss the components of the physical exam and skills involved.
	28.03	Differentiate between the history and physical exam that are performed for responsive patients with no known prior history, responsive patients with a known prior history and unresponsive patients.
29.0	Describe the significance of monitoring devices in patient assessment. – The students will be able to:	
	29.01	Explain and demonstrate the use and interpretation of pulse oximetry device readings.
	29.02	List normal blood pressure ranges for the pediatric, adult and geriatric patient.
	29.03	Demonstrate how to measure a blood pressure by palpation, auscultation and electronic devices while in the field.

30.0	**Discuss the components and factors of reassessment and its significance in patient assessment. – The students will be able to:**
	30.01 Describe the components of the reassessment and demonstrate the skills involved.
	30.02 Discuss the reasons for repeating the initial assessment as part of the reassessment.
	30.03 Explain trending assessment components and its value to other health professionals who assume care of the patient.
31.0	**Demonstrate an understanding and proficiency in Airway Management techniques – The students will be able to:**
	31.01 Name & label the structures of the respiratory system
	31.02 State what care should be provided for a patient with or without adequate breathing.
	31.03 Describe & demonstrate the steps in performing the head-tilt chin-lift.
	31.04 Relate mechanism of injury to opening the airway.
	31.05 Describe & demonstrate the steps in performing the jaw thrust.
	31.06 Describe& demonstrate the techniques of suctioning and its importance.
32.0	**Demonstrate an understanding and proficiency in Respiration techniques. – The students will be able to:**
	32.01 Describe the pulmonary ventilation process to include mechanics of ventilation & alveolar ventilation (tidal volumes, dead space, etc)
	32.02 Describe the oxygenation process
	32.03 Explain both external & internal respiration process
	32.04 Discuss the various pathophysiologies of the respiratory system.
	32.05 Describe how to assess for adequate and inadequate respiration, including the use of pulse oximetry.
	32.06 List the components, purpose, indications, contraindications, complications and procedures for oxygen delivery devices.
	32.07 Demonstrate oxygen administration for the pediatric, adult and geriatric patient.
	32.08 Describe and demonstrate the steps in performing the skill of assisting ventilations in the conscious and unconscious patient in

	respiratory distress using a bag-valve-mask (BVM), and continuous positive airway pressure (CPAP).
33.0	**Demonstrate an understanding and proficiency in Artificial Ventilation techniques. – The students will be able to:**
33.01	Demonstrate how to insert an oropharyngeal (oral), a nasopharyngeal (nasal) airway and a supraglottic airway.
33.02	Describe & demonstrate how to artificially ventilate a patient with a pocket mask.
33.03	Describe& demonstrate the steps in performing the skill of artificially ventilating a patient with a BVM for one or two rescuers.
33.04	Describe & demonstrate the signs of adequate & inadequate artificial ventilation using the BVM.
33.05	Describe & demonstrate the steps in artificially ventilating a patient with a manually triggered ventilation device.
33.06	Demonstrate how to artificially ventilate the pediatric, adult and geriatric patient.
33.07	Describe & demonstrate how to perform the Sellick maneuver (cricoid pressure).
33.08	Recognize the differences between normal and positive pressure ventilation.
34.0	**Apply a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation – The students will be able to:**
34.01	Discuss withholding resuscitation if irreversible death is obvious or if a "DO Not Resuscitate" (DNR) is present.
34.02	Review the anatomy & physiology of the respiratory & cardiovascular systems
34.03	Discuss, identify pathophysiologies & medical care for respiratory failure as well as respiratory and cardiac arrest.
34.04	Explain the system components of CPR, the four links in the AHA chain of survival & how each one relates to maximizing the survival of the patient.
34.05	Show Provider (AHA guidelines) certification required prior to EMT program admission as per FS 401.27.
34.06	Understand shock, including the pathophysiology, causes, and its signs and symptoms associated with the various types of shock.
34.07	Discuss patient assessment and steps to the emergency care of the patient with signs & symptoms of shock.
34.08	Discuss and distinguish the variations & causes between the emergency medical care of the pediatric, adult and geriatric patient experiencing shock.

35.0	Apply knowledge to provide care for patients with a neurological emergency. – The students will be able to:	
	35.01	Discuss & review the anatomy, physiology & pathophysiology of the brain & spinal cord
	35.02	Discuss & identify the causes of ischemic strokes, hemorrhagic strokes & transient ischemic attacks and their similarities & differences.
	35.03	Discuss & demonstrate how to use the stroke assessment tool accepted by the State of Florida to identify a stroke patient rapidly.
	35.04	Define and differentiate generalize seizure, partial seizure & status epilepticus and list their possible causes.
	35.05	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with neurological emergencies.
36.0	Apply knowledge to provide care for patients with an Abdominal/Gastrointestinal emergency. – The students will be able to:	
	36.01	Discuss and review the basic anatomy physiology & pathophysiology of the gastrointestinal, genital & urinary systems.
	36.02	Define the term," acute abdomen."
	36.03	Identify the signs & symptoms, and common causes of an acute abdomen.
	36.04	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with gastrointestinal emergencies.
37.0	Apply knowledge to provide care for patients with an Immunologic emergency. – The students will be able to:	
	37.01	Understand and define the terms allergic reaction and anaphylaxis
	37.02	Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an allergic reaction.
	37.03	State the generic and trade names, medication forms, dose, administration, action, and contraindications for the epinephrine auto-injector.
	37.04	Demonstrate the use of epinephrine auto-injector
38.0	Apply knowledge to provide care for a patient experiencing an infectious disease. – The students will be able to:	
	38.01	List the causes of infectious diseases
	38.02	Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an infectious disease.

	38.03 Discuss mandatory notification to State or Federal agencies of various diseases.
39.0	Apply knowledge to provide care for a patient with an endocrine disorder. – The students will be able to:
	39.01 Review the anatomy, physiology & pathophysiology of the endocrine system and its main function in the body.
	39.02 Define diabetes (type I & II), Hypoglycemia, Hyperglycemia & diabetic ketoacidosis.
	39.03 Identify & demonstrate the steps in the emergency medical care of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
	39.04 State the generic and trade names, medication forms, dose, administration, action, and contraindications for oral glucose.
	39.05 Demonstrate the steps of using a glucometer device and administering oral glucose.
	39.06 Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a diabetic emergency.
40.0	Apply knowledge to provide care for a patient with a psychiatric emergency. – The students will be able to:
	40.01 Define behavior, psychiatric disorders & behavioral emergencies.
	40.02 Discuss the general factors that may cause an alteration in a patient's behavior.
	40.03 Discuss the risk factors/signs or symptoms of various psychiatric emergencies.
	40.04 Discuss special medical/legal considerations for managing behavioral emergencies to include Florida statues:
	40.04.01 Baker Act (FS 394.451)
	40.04.02 Marchman Act (FS 397.601 & FS 397.675)
	40.04.03 Emergency examination & treatment of incapacitated (FS401.445)
	40.05 Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a behavioral or psychiatric emergency.
	40.06 Demonstrate various techniques to safely restrain a patient with a behavioral problem.
41.0	Apply knowledge to provide care for patients with a cardiovascular emergency. – The students will be able to:

41.01	Review the basic anatomy, physiology and pathophysiology of the cardiovascular system.	
41.02	Describe the anatomy, physiology, pathophysiology and demonstrate the assessment & management of :	
	41.02.01	Angina pectoris
	41.02.02	Thromboembolism
	41.02.03	Myocardial infarction
	41.02.04	Hypertensive emergencies
	41.02.05	Aortic aneurysm/dissection
	41.02.06	Heart Failure
41.03	Demonstrate the ability to assess and treat a patient with signs and symptoms of cardiac issues, including airway, medication administration, position of comfort and life span considerations.	
41.04	List the indications & contraindications for automated external defibrillation (AED).	
41.05	Explain the impact of age and weight on defibrillation.	
41.06	Discuss the position of comfort for patients with various cardiac emergencies.	
41.07	Explain the rationale for early defibrillation.	
41.08	Explain that not all chest pain patients result in cardiac arrest and do not need to be attached to an automated external defibrillator.	
41.09	Discuss the various types of automated external defibrillators.	
41.10	Differentiate between the fully automated and the semi-automated defibrillator.	
41.11	Understand the importance of maintenance and operators check list for AED's.	
41.12	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.	
41.13	Explain the role medical direction plays in the use of automated external defibrillation.	
42.0	Apply knowledge of toxicology to provide care for a patient with a poisoning or overdose emergency. – The students will be able to:	

	42.01	Define toxicology, poisoning & overdose.
	42.02	List various ways that poisons enter the body.
	42.03	List signs/symptoms associated with poisoning.
	42.04	Discuss & demonstrate the emergency medical care for the pediatric, adult and geriatric patient with poisoning or overdose.
	42.05	State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects and re-assessment strategies for activated charcoal.
	42.06	Perform the necessary steps required to provide a patient with activated charcoal.
43.0		Apply knowledge to provide care for a patient with a respiratory emergency. – The students will be able to:
	43.01	List the structure, function and pathophysiology of the respiratory system.
	43.02	List signs of adequate air exchange.
	43.03	State the signs and symptoms of a patient with respiratory distress.
	43.04	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with a respiratory emergency.
	43.05	State the generic name, medication forms, dose, administration, action, indications and contraindications for the metered-dose inhaler.
	43.06	Demonstrate the steps in facilitating the use of an inhaler.
	43.07	Differentiate between upper airway obstruction and lower airway disease in the pediatric, adult and geriatric patient.
44.0		Apply knowledge of Hematology to provide care for patients with a clotting disorder or are experiencing a sickle cell disease crisis. – The students will be able to:
	44.01	List the composition, physiology & pathophysiology of blood.
	44.02	State the signs and symptoms of a patient with a Sickle Cell crisis or a clotting disorder.
	44.03	Describe & demonstrate the emergency medical care of the patient with Sickle cell distress or clotting disorder.
45.0		Apply knowledge to provide care for a patient with a genitourinary/renal emergency. – The students will be able to:

	45.01	List the anatomy, physiology & pathophysiology of the renal system.
	45.02	Understand the principles of kidney dialysis.
	45.03	State the signs and symptoms of a patient with a dialysis emergency.
	45.04	Describe & demonstrate the emergency medical care of the patient with a dialysis emergency.
46.0	Apply knowledge to provide care for a patient with a gynecologic emergency. – The students will be able to:	
	46.01	Describe the basic anatomy, physiology and pathophysiology of the female reproductive system.
	46.02	Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a female reproductive system emergency.
	46.03	Explain the general management of a gynecologic emergency in relation to patient privacy and communication.
	46.04	Discuss the special consideration and precautions an EMT must observe when arriving at the scene of a suspected case of sexual assault or rape.
47.0	Apply knowledge to provide care for a patient with a Non-Traumatic Musculoskeletal emergency. – The students will be able to:	
	47.01	Describe the basic anatomy, physiology and pathophysiology of the skeletal system (i.e. cancer or osteoporosis).
	47.02	Describe & demonstrate the emergency medical care of the patient with a non-traumatic musculoskeletal emergency.
48.0	Describe an overview of the identification, categorization, pathophysiology and assessment of a trauma patient. – The students will be able to:	
	48.01	Discuss and define pathophysiology of the trauma patient
	48.02	Discuss and demonstrate assessment and management of the trauma patient.
	48.03	Discuss and describe significant & non-significant Mechanism of Injury (MOI) & provide examples of each.
	48.04	Discuss and describe State of Florida's trauma scorecard methodologies as required in FS 401.2701 & 64J-2.004 & 2.005.
	48.05	Discuss the National Trauma Triage Protocol of injured Patients (http://cdc.gov/fieldtriage/)
49.0	Demonstrate an understanding and the skills required for the management of a patient with traumatic bleeding. – The students will be able	

	to:	
	49.01	Review the anatomy & physiology of the circulatory system
	49.02	Differentiate between:
		49.02.01 Internal and external bleeding.
		49.02.02 Arterial, venous and capillary bleeding.
	49.03	Explain and demonstrate emergency medical care of the patient with external & internal bleeding.
	49.04	List signs and symptoms of shock (hypo-perfusion).
50.0	Demonstrate an understanding and the skills required for the management of a patient with a chest trauma. – The students will be able to:	
	50.01	Discuss MOI for chest injury (blunt & penetrating, energy & injury).
	50.02	List the anatomy, physiology & pathophysiology of the thoracic/chest cavity & respiratory system.
	50.03	Differentiate between a pneumothorax (open, simple & tension) & hemothorax.
	50.04	Describe and demonstrate the assessment & management of a patient with a suspected chest (open and closed) injury.
51.0	Demonstrate an understanding and the skills required for the management of a patient with an abdominal/genitourinary trauma. – The students will be able to:	
	51.01	Discuss MOI for abdominal injury (blunt & penetrating, energy & injury).
	51.02	List the anatomy, physiology & pathophysiology of the abdominal cavity & genitourinary (both male & female) system.
	51.03	Describe the abdominal quadrants
	51.04	Describe the differences between hollow & solid organs.
	51.05	Describe and demonstrate the assessment & management of a patient with a suspected abdominal (penetrating or blunt) or genitourinary injury.
	51.06	Explain special consideration related to a patient who has experienced an injury by sexual assault/abuse.
52.0	Demonstrate an understanding and the skills required for the management of a patient with an orthopedic trauma. – The students will be	

	able to:
	52.01 Discuss MOI for orthopedic injury (blunt & penetrating, energy & injury).
	52.02 Review the anatomy, physiology & pathophysiology of the musculoskeletal system.
	52.03 Describe the different types of musculoskeletal injuries including fractures, amputations, sprains, & strains.
	52.04 Differentiate between an open and a closed painful, swollen, deformed extremity.
	52.05 Describe and demonstrate the assessment & management of a patient with a suspected orthopedic injury.
53.0	Demonstrate an understanding and the skills required for the management of a patient with a soft tissue trauma. – The students will be able to:
	53.01 Discuss & list the anatomy and physiology, to include the layers, of the skin.
	53.02 Discuss and list the types of open & closed soft tissue injury.
	53.03 Define and list characteristics of superficial, partial-thickness and full-thickness burns.
	53.04 Explain how the seriousness of a burn is related to its depth and extent (percent of body surface area (BSA) involved or rule of 9s) for adult & pediatric patient.
	53.05 Describe and demonstrate the assessment & management of a patient with a soft tissue injury.
54.0	Demonstrate an understanding and the skills required for the management of a patient with a head, facial, or neck (non-spinal) trauma. – The students will be able to:
	54.01 List the anatomy, physiology & pathophysiology of the head, face, & neck.
	54.02 Discuss MOI for head, face, & neck (non-spinal) (blunt & penetrating, energy & injury).
	54.03 Describe and demonstrate the assessment & management of a patient with an injury to the head, face & neck (non-spinal).
55.0	Demonstrate an understanding and the skills required for the management of a patient with a nervous system trauma. – The students will be able to:
	55.01 Review the anatomy, physiology & pathophysiology of the nervous system.

	55.02	Explain functions of the somatic & autonomic nervous system
	55.03	Discuss MOI for head (brain) & spinal (blunt & penetrating, energy & injury).
	55.04	Discuss the different types of brain injuries and their corresponding signs and symptoms, including increased intracranial pressure (ICP), concussion, contusion & injuries caused my medical conditions.
	55.05	Describe and demonstrate the assessment & management of a patient with a head (brain) and spinal injury.
56.0	Demonstrate an understanding of the special considerations for the management of a patient experiencing a trauma during pregnancy. – The students will be able to:	
	56.01	Discuss Anatomy, physiology & pathophysiology of the pregnant trauma patient.
	56.02	Discuss MOI and fetal considerations for the pregnant trauma patient.
	56.03	Discuss & demonstrate unique injuries and conditions along with assessment & management for the pregnant patient involved in trauma.
57.0	Demonstrate an understanding of the special considerations for the management of the pediatric patient experiencing a trauma. – The students will be able to:	
	57.01	Discuss Anatomy, physiology & pathophysiology of the pediatric trauma patient.
	57.02	Discuss & demonstrate unique assessment & management considerations for the pediatric trauma patient.
58.0	Demonstrate an understanding of the special considerations for the management of the geriatric patient experiencing a trauma. – The students will be able to:	
	58.01	Discuss Anatomy, physiology & pathophysiology of the elderly trauma patient.
	58.02	Discuss & demonstrate unique assessment & management considerations for the elderly trauma patient.
59.0	Demonstrate an understanding of the special considerations for the management of the cognitively impaired patient experiencing a trauma. – The students will be able to:	
	59.01	Discuss anatomy, physiology & pathophysiology of the cognitively impaired trauma patient.
	59.02	Discuss & demonstrate unique assessment & management considerations for the cognitively impaired trauma patient.

60.0	Discuss and demonstrate how to assess and manage environmental trauma emergencies. – The students will be able to:	
	60.01	Define drowning and discuss its incidence, rick factors & prevention.
	60.02	List pathophysiologies of water related incidents
	60.03	Describe submersion in salt and fresh water
	60.04	Discuss & demonstrate assessment & management considerations for a patient of a submersion incident.
	60.05	Describe the different types of diving emergencies and how they may occur.
	60.06	List pathophysiologies of dysbarism incidents to include high altitudes and diving incidents.
	60.07	Discuss & demonstrate assessment & management considerations for a patient of a dysbarism incident.
	60.08	Discuss & demonstrate assessment & management considerations for a patient of a lightning incident
	60.09	Explain the five ways a body can lose heat
	60.10	List pathophysiologies of temperature related incidents to include both cold and heat related illness.
	60.11	Discuss & demonstrate assessment & management considerations for a patient of a temperature related illness
	60.12	Identify the species of insects, spiders & snakes in the US that may cause life threatening injuries.
	60.13	Discuss & demonstrate assessment & management considerations for a patient of a bite or envenomation incident.
61.0	Define and articulate the kinematics of trauma. – The students will be able to:	
	61.01	Explain the relationship between mechanism of injury and potential energy, kinetic energy and work.
	61.02	Define term blunt & penetrating trauma and provide examples of the mechanism of injury (MOI) that would cause each to occur and include:
		61.02.01 Affects of high, medium & low velocity penetrating trauma
		61.02.02 Primary, secondary, tertiary and miscellaneous blast injuries
		61.02.03 Factors to consider of a patient injured in a fall

	61.02.04 Consider age (the pediatric, adult and geriatric patient)
62.0	Describe the components and procedures of a multi-system trauma. – The students will be able to:
	62.01 Describe and provide a general overview of multisystem trauma patient management.
	62.02 Discuss the golden principle of out-of-hospital trauma care
	62.03 Discuss & demonstrate assessment & management considerations for a patient of multi system injuries.
63.0	Apply knowledge of growth development, aging and assessment to the obstetric and neonatal populations. – The students will be able to:
	63.01 Review the anatomy, physiology & pathophysiology of the female reproductive system.
	63.02 Explain the normal changes that occur during pregnancy.
	63.03 Differentiate between the stages of labor and delivery.
	63.04 Discuss & demonstrate assessment & management considerations of a pregnancy
	63.05 Discuss assessment & management considerations of complications of pregnancy.
	63.06 Discuss & demonstrate assessment & management considerations of a neonate.
64.0	Apply knowledge of growth development, aging and assessment to the pediatric population. – The students will be able to:
	64.01 List the anatomy, physiology & pathophysiology of the pediatric patient.
	64.02 Describe the differences in anatomy when compared to the adult patient to
	64.03 Discuss & demonstrate assessment & management considerations of a pediatric emergency.
	64.04 The most common causes of the following conditions in the pediatric patient.
	64.04.01 Shock
	64.04.02 Altered mental status and seizures
	64.04.03 Gastrointestinal emergencies
	64.04.04 Poisonings

	64.04.05	Drowning
	64.04.06	Trauma
	64.05	Discuss & demonstrate assessment & management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
65.0	Apply knowledge of growth development, aging and assessment to the geriatric population. – The students will be able to:	
	65.01	Define and discuss the term "geriatrics."
	65.02	List the anatomy, physiology & pathophysiology of the Geriatric patient.
	65.03	Discuss & demonstrate assessment & management considerations of a geriatric emergency.
66.0	Apply knowledge of growth development, aging and assessment to patients with special challenges. – The students will be able to:	
	66.01	Define and discuss child and elder abuse and neglect and possible indicators of each.
	66.02	Discuss assessment & management considerations of a patient with special needs to include child and elder abuse and neglect, homelessness/poverty, etc.
67.0	Discuss and demonstrate the principles of safely operating a ground ambulance. – The students will be able to:	
	67.01	Discuss the importance of performing regular vehicle & equipment inspection.
	67.02	Describe the general provisions of Florida laws relating to the operation of the ambulance and privileges.
	67.03	Discuss "Due Regard for Safety of All Others" while operating an emergency vehicle.
	67.04	Provide examples of some high risk situations and hazards that may affect the safety of the ambulance and its passengers during both pre-transport & transport.
68.0	Discuss an overview of EMS operations during a multiples casualty incident. – The students will be able to:	
	68.01	Describe the specific condition that would define a mass-casualty incident (MCI) and give examples.
	68.02	Describe primary and secondary triage, how the four triage categories are assigned and how destination decisions are made.
	68.03	Describe how the techniques of triage are performed.

	68.04	Demonstrate how to perform a triage based scenario that involves an MCI.
69.0		Demonstrate knowledge and procedures involved in safely operating in and around an air medical operations landing zone. – The students will be able to:
	69.01	Discuss safe air medical operations
	69.02	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
	69.03	Discuss the criteria for utilizing an air medial response
70.0		Discuss correct procedures of extrication to ensure EMS personnel and patient safety during extrication operations. – The students will be able to:
	70.01	Describe the role of the EMT in patient rescue & vehicle extrication
	70.02	Describe personal and patient safety during vehicle extrication.
	70.03	Discuss the factors related to ensuring situational safety at the site of a vehicle extrication
	70.04	Explain the difference between simple access and complex access in vehicle extrication
	70.05	Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
71.0		Discuss the risks and responsibilities of operating during a terrorism event or during a natural or man-made disaster. – The students will be able to:
	71.01	Describe the role of the EMT on the scene of a natural or man-made disaster
	71.02	Define the term international terrorism & domestic terrorism and provide examples of incidents of each.
	71.03	Describe personal & patient safety during a natural or man-made disaster.
	71.04	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.

Florida Department of Education
Student Performance Standards

Program Title: **Emergency Medical Technician -ATD**
ATD CIP Number: **0351090403**
SOC Code(s):   **29-2041**

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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:
Emergency Medical Technician: Intended outcomes 12-71 complete the occupational exit of EMT. The outcomes may be taught as one or more modules at the postsecondary level.
12.0   Apply fundamental knowledge of the anatomy and physiology of all human body systems to the practice of EMS – The students will be able to:
12.01   Label the following topographic terms: Medial, lateral, proximal, distal, superior, inferior, anterior, posterior, midline, right and left, mid-clavicular, bilateral, mid-axillary.
12.02   Describe& identify the anatomy and function of the following major body systems: Respiratory, circulatory, musculoskeletal, nervous, integumentary, digestive, urinary, genital and endocrine.
12.03   Define the medical terminology & medical terms associated with the EMT level.
12.04   Define Pathophysiology.
12.05   Chart the life support chain, aerobic metabolism and anaerobic metabolism.

13.0	**Apply fundamental knowledge of life span development to patient assessment and management. – The students will be able to:**	
	13.01	Understand the terms used to designate the following stages of life: infants, toddlers, preschoolers, school-age children, adolescents (teenagers), early adults, middle adults & late adults.
	13.02	Describe the major physiologic & psychosocial characteristics of:
		13.02.01 An infant's life
		13.02.02 A toddler and preschooler's life
		13.02.03 A school age child's life
		13.02.04 An adolescent's life
		13.02.05 An early adults life
		13.02.06 A middle adult's life
		13.02.07 A late adult's life
14.0	**Describe the history and evolution of the EMS system. – The students will be able to:**	
	14.01	Define Emergency Medical Services (EMS) systems.
	14.02	Discuss the historical background of the development of the EMS system.
	14.03	Identify the four levels of national EMS providers (EMR, EMT, AEMT & PM) as well as the three levels in the State of Florida.
	14.04	State the specific statutes and regulations regarding the EMS system in Florida.
15.0	**Discuss and explain the roles, responsibilities & professionalism of EMS Personnel – The students will be able to:**	
	15.01	Discuss vehicle & equipment readiness
	15.02	Characterize the EMS system's role in prevention and public education.
	15.03	Discuss the roles and responsibilities of the EMT related to personal safety of the crew, patient and by standers.
	15.04	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership and perform patient

		assessment and administer emergency care.
	15.05	Discuss the maintenance of certification & licensure for the EMT in the State of Florida and NREMT.
	15.06	Define quality improvement and discuss the EMT's role in the process.
	15.07	Discuss EMS research & evidence based decision making.
16.0	Discuss the significance of using the correct safety precautions to ensure the safety of the patient, the EMT and the EMS team. – The students will be able to:	
	16.01	Explain the need to determine scene safety.
	16.02	Discuss the importance of body substance isolation (BSI).
	16.03	Describe the steps the EMT should take for personal protection from airborne and blood borne pathogens as well as communicable disease.
	16.04	List the personal protective equipment necessary to protect oneself in common emergency situations.
17.0	Discuss stress management techniques useful for both the EMT and the patient. – The students will be able to:	
	17.01	List possible emotional reactions that an individual (EMT and EMT family, Patient and Patient family) may experience when faced with trauma, illness, death and dying.
	17.02	State the steps the EMT should take when approaching a family confronted with death and dying.
	17.03	Recognize the warning signs of personal stress and discuss the strategies EMTs can apply to manage it.
18.0	Discuss the procedures to safely lift and move patients of various age groups and situations (emergency, Urgent and non-urgent moves). – The students will be able to:	
	18.01	Demonstrate good body mechanics while using a stretcher and other patient moving devices.
	18.02	Discuss the guidelines and safety precautions that need to be followed when lifting a patient.
	18.03	Describe the guidelines and safety precautions for carrying patients and/or equipment.
	18.04	State the guidelines for reaching and their application.

	18.05	State the guidelines for pushing and pulling.
	18.06	Discuss patient positioning in common emergency situations.
	18.07	Discuss situation that may require the use of medical restraints on the patient & explain guidelines and safety consideration for their use.
19.0	Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team(taught to the level described in FS 401.2701) – The students will be able to:	
	19.01	Define "infectious disease" and "communicable disease."
	19.02	Describe the routes of transmission for infectious disease.
	19.03	Explain the mode of transmission and the steps to prevent/deal with an exposure of hepatitis, meningitis, tuberculosis & HIV.
	19.04	Explain how immunity to infectious diseases is acquired.
	19.05	Explain post exposure management of exposure to patient blood or body fluids, including completing a post exposure report.
	19.06	Describe the components of physical fitness & mental wellbeing
20.0	Describe the principles of medical documentation and report writing. – The students will be able to:	
	20.01	Describe the use of written communication and documentation.
	20.02	Explain the legal implication of the patient care report.
	20.03	Identify the minimum dataset reference patient information and administrative information on the patient care report.
	20.04	Understand how to document refusal of care, including legal implications.
21.0	Describe the components of the EMS Communication system. – The students will be able to:	
	21.01	Understand the basic principles of the various types of communications equipment used in EMS
	21.02	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission
	21.03	State the proper procedures and sequence for delivery of patient information to other healthcare professionals.

	21.04	Identify the essential components of the verbal report and legal aspects that need to be considered.
22.0	Describe the significance of communication techniques for the EMT. – The students will be able to:	
	22.01	Describe principles of therapeutic and effective communication with patients in a manner that achieves a positive relationship.
	22.02	Discuss adjusting communication strategies to effectively communicate to differing age groups, developmental stages, patients with special needs, and differing cultures, including language barriers.
	22.03	Discuss the communication techniques that should be used to interact with the patient, patient family, bystanders, and individuals from other agencies including verbal diffusion and interview techniques.
23.0	Discuss the medical, legal and ethical issues to the provision of emergency care. – The students will be able to:	
	23.01	Differentiate between expressed, implied and involuntary consent
	23.02	Discuss the methods of obtaining consent and procedures for minors.
	23.03	Discuss the issues of abandonment, negligence, false imprisonment and battery and their implications to the EMT.
	23.04	Discuss the implications for the EMT in patient refusal of care and/or transport.
	23.05	Explain the importance, necessity and legality of patient confidentiality.
	23.06	Discuss the importance of Do Not Resuscitate [DNR] (advance directives) and local or Florida provisions regarding EMS application.
	23.07	Discuss State of Florida & Federal special reporting situations such as abuse, sexual assault, gunshots & knife wounds, communicable disease, etc
	23.08	Differentiate between civil tort & criminal actions
	23.09	List the elements of negligence and defenses/protections from liability.
	23.10	Discuss the role of the EMT at crime scenes and preservation of evidence.
	23.11	Define ethics & morality and discuss their implication for the EMT.
24.0	Discuss the principles of pharmacology as they are related to emergency care. – The students will be able to:	

	24.01	Explain the "six rights" of medication administration and describe how each one related to EMS.
	24.02	Discuss the forms in which the medications may be found and provide examples of each and discuss how the form of a medication dictates its route of administration.
	24.03	Describe the difference between a generic medication name and trade name, and provide an example of each.
	24.04	Discuss the components and elements of a drug profile including, actions, contraindications, side effects, dose and route.
	24.05	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).
	24.06	Give the generic and trade names, actions, indication, contraindications, routes of administration, side effects, interactions & doses of medications that may be administered by and EMT in an emergency as dictated by the State of Florida & local medical direction.
	24.07	Demonstrate how to administer medication in the following routes; oral, sublingual and auto-injector.
25.0	Discuss and demonstrate scene size up and management in an emergency situation. – The students will be able to:	
	25.01	Recognize and describe hazards/potential hazards at the scene.
	25.02	Determine if the scene is safe to enter.
	25.03	Discuss common mechanisms of injury/nature of illness.
	25.04	Discuss the procedures for multiple-patient situations.
	25.05	Explain why it is important for the EMT to determine the need for additional or specialized resources.
	25.06	List the minimum standard precautions that should be followed and PPE that should be worn at the emergency scene.
26.0	Discuss and demonstrate primary patient assessment procedures for all patient age levels. – The students will be able to:	
	26.01	Summarize the elements of a general impression of the patient.
	26.02	Discuss & demonstrate methods of assessing altered mental status using assess for level of consciousness (AVPU).
	26.03	Discuss & demonstrate methods of assessing the airway and providing airway care.
	26.04	Describe& demonstrate methods used for assessing if a patient is breathing

	26.05	Differentiate between a patient with adequate and inadequate breathing.
	26.06	Distinguish between methods of assessing breathing.
	26.07	Describe& demonstrate the methods used to obtain a pulse.
	26.08	Discuss & demonstrate the need for assessing the patient for external bleeding.
	26.09	Describe & demonstrate normal and abnormal findings when assessing skin color, temperature, moisture & capillary refill in the pediatric, adult and geriatric patient.
	26.10	Explain the reason for & demonstrate prioritizing a patient for care and transport.
27.0	Discuss and demonstrate the procedures for taking the history of a patient. – The students will be able to:	
	27.01	Discuss the process of taking a history, its key components and its relationship to the primary assessment process.
	27.02	Explain the importance of obtaining a SAMPLE & OPQRST history.
	27.03	Recognize and respond to the feelings patients experience during assessment.
	27.04	Describe examples of different techniques the EMT may use to obtain information from patients, family or bystanders during the history taking process.
28.0	Discuss and demonstrate secondary patient assessment procedures for all patient age levels. – The students will be able to:	
	28.01	Describe the unique needs & demonstrate assessing an individual with a specific chief complaint with no known prior history.
	28.02	Discuss the components of the physical exam and skills involved.
	28.03	Differentiate between the history and physical exam that are performed for responsive patients with no known prior history, responsive patients with a known prior history and unresponsive patients.
29.0	Describe the significance of monitoring devices in patient assessment. – The students will be able to:	
	29.01	Explain and demonstrate the use and interpretation of pulse oximetry device readings.
	29.02	List normal blood pressure ranges for the pediatric, adult and geriatric patient.
	29.03	Demonstrate how to measure a blood pressure by palpation, auscultation and electronic devices while in the field.

30.0	Discuss the components and factors of reassessment and its significance in patient assessment. – The students will be able to:
	30.01 Describe the components of the reassessment and demonstrate the skills involved.
	30.02 Discuss the reasons for repeating the initial assessment as part of the reassessment.
	30.03 Explain trending assessment components and its value to other health professionals who assume care of the patient.
31.0	Demonstrate an understanding and proficiency in Airway Management techniques – The students will be able to:
	31.01 Name & label the structures of the respiratory system
	31.02 State what care should be provided for a patient with or without adequate breathing.
	31.03 Describe & demonstrate the steps in performing the head-tilt chin-lift.
	31.04 Relate mechanism of injury to opening the airway.
	31.05 Describe & demonstrate the steps in performing the jaw thrust.
	31.06 Describe& demonstrate the techniques of suctioning and its importance.
32.0	Demonstrate an understanding and proficiency in Respiration techniques. – The students will be able to:
	32.01 Describe the pulmonary ventilation process to include mechanics of ventilation & alveolar ventilation (tidal volumes, dead space, etc)
	32.02 Describe the oxygenation process
	32.03 Explain both external & internal respiration process
	32.04 Discuss the various pathophysiologies of the respiratory system.
	32.05 Describe how to assess for adequate and inadequate respiration, including the use of pulse oximetry.
	32.06 List the components, purpose, indications, contraindications, complications and procedures for oxygen delivery devices.
	32.07 Demonstrate oxygen administration for the pediatric, adult and geriatric patient.
	32.08 Describe and demonstrate the steps in performing the skill of assisting ventilations in the conscious and unconscious patient in

	respiratory distress using a bag-valve-mask (BVM), and continuous positive airway pressure (CPAP).
33.0	**Demonstrate an understanding and proficiency in Artificial Ventilation techniques. – The students will be able to:**
33.01	Demonstrate how to insert an oropharyngeal (oral), a nasopharyngeal (nasal) airway and a supraglottic airway.
33.02	Describe & demonstrate how to artificially ventilate a patient with a pocket mask.
33.03	Describe& demonstrate the steps in performing the skill of artificially ventilating a patient with a BVM for one or two rescuers.
33.04	Describe & demonstrate the signs of adequate & inadequate artificial ventilation using the BVM.
33.05	Describe & demonstrate the steps in artificially ventilating a patient with a manually triggered ventilation device.
33.06	Demonstrate how to artificially ventilate the pediatric, adult and geriatric patient.
33.07	Describe & demonstrate how to perform the Sellick maneuver (cricoid pressure).
33.08	Recognize the differences between normal and positive pressure ventilation.
34.0	**Apply a fundamental knowledge of the causes, pathophysiology and management of shock and the components of resuscitation – The students will be able to:**
34.01	Discuss withholding resuscitation if irreversible death is obvious or if a "DO Not Resuscitate" (DNR) is present.
34.02	Review the anatomy & physiology of the respiratory & cardiovascular systems
34.03	Discuss, identify pathophysiologies & medical care for respiratory failure as well as respiratory and cardiac arrest.
34.04	Explain the system components of CPR, the four links in the AHA chain of survival & how each one relates to maximizing the survival of the patient.
34.05	Show Provider (AHA guidelines) certification required prior to EMT program admission as per FS 401.27.
34.06	Understand shock, including the pathophysiology, causes, and its signs and symptoms associated with the various types of shock.
34.07	Discuss patient assessment and steps to the emergency care of the patient with signs & symptoms of shock.
34.08	Discuss and distinguish the variations & causes between the emergency medical care of the pediatric, adult and geriatric patient experiencing shock.

35.0	Apply knowledge to provide care for patients with a neurological emergency. – The students will be able to:
	35.01 Discuss & review the anatomy, physiology & pathophysiology of the brain & spinal cord
	35.02 Discuss & identify the causes of ischemic strokes, hemorrhagic strokes & transient ischemic attacks and their similarities & differences.
	35.03 Discuss & demonstrate how to use the stroke assessment tool accepted by the State of Florida to identify a stroke patient rapidly.
	35.04 Define and differentiate generalize seizure, partial seizure & status epilepticus and list their possible causes.
	35.05 Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with neurological emergencies.
36.0	Apply knowledge to provide care for patients with an Abdominal/Gastrointestinal emergency. – The students will be able to:
	36.01 Discuss and review the basic anatomy physiology & pathophysiology of the gastrointestinal, genital & urinary systems.
	36.02 Define the term," acute abdomen."
	36.03 Identify the signs & symptoms, and common causes of an acute abdomen.
	36.04 Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with gastrointestinal emergencies.
37.0	Apply knowledge to provide care for patients with an Immunologic emergency. – The students will be able to:
	37.01 Understand and define the terms allergic reaction and anaphylaxis
	37.02 Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an allergic reaction.
	37.03 State the generic and trade names, medication forms, dose, administration, action, and contraindications for the epinephrine auto-injector.
	37.04 Demonstrate the use of epinephrine auto-injector
38.0	Apply knowledge to provide care for a patient experiencing an infectious disease. – The students will be able to:
	38.01 List the causes of infectious diseases
	38.02 Describe & demonstrate the emergency medical care of the pediatric, adult and geriatric patient experiencing an infectious disease.

	38.03 Discuss mandatory notification to State or Federal agencies of various diseases.
39.0	Apply knowledge to provide care for a patient with an endocrine disorder. – The students will be able to:
	39.01 Review the anatomy, physiology & pathophysiology of the endocrine system and its main function in the body.
	39.02 Define diabetes (type I & II), Hypoglycemia, Hyperglycemia & diabetic ketoacidosis.
	39.03 Identify & demonstrate the steps in the emergency medical care of the patient taking diabetic medicine with an altered mental status and a history of diabetes.
	39.04 State the generic and trade names, medication forms, dose, administration, action, and contraindications for oral glucose.
	39.05 Demonstrate the steps of using a glucometer device and administering oral glucose.
	39.06 Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a diabetic emergency.
40.0	Apply knowledge to provide care for a patient with a psychiatric emergency. – The students will be able to:
	40.01 Define behavior, psychiatric disorders & behavioral emergencies.
	40.02 Discuss the general factors that may cause an alteration in a patient's behavior.
	40.03 Discuss the risk factors/signs or symptoms of various psychiatric emergencies.
	40.04 Discuss special medical/legal considerations for managing behavioral emergencies to include Florida statues:
	40.04.01 Baker Act (FS 394.451)
	40.04.02 Marchman Act (FS 397.601 & FS 397.675)
	40.04.03 Emergency examination & treatment of incapacitated (FS401.445)
	40.05 Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a behavioral or psychiatric emergency.
	40.06 Demonstrate various techniques to safely restrain a patient with a behavioral problem.
41.0	Apply knowledge to provide care for patients with a cardiovascular emergency. – The students will be able to:

	41.01	Review the basic anatomy, physiology and pathophysiology of the cardiovascular system.
	41.02	Describe the anatomy, physiology, pathophysiology and demonstrate the assessment & management of :
		41.02.01 Angina pectoris
		41.02.02 Thromboembolism
		41.02.03 Myocardial infarction
		41.02.04 Hypertensive emergencies
		41.02.05 Aortic aneurysm/dissection
		41.02.06 Heart Failure
	41.03	Demonstrate the ability to assess and treat a patient with signs and symptoms of cardiac issues, including airway, medication administration, position of comfort and life span considerations.
	41.04	List the indications & contraindications for automated external defibrillation (AED).
	41.05	Explain the impact of age and weight on defibrillation.
	41.06	Discuss the position of comfort for patients with various cardiac emergencies.
	41.07	Explain the rationale for early defibrillation.
	41.08	Explain that not all chest pain patients result in cardiac arrest and do not need to be attached to an automated external defibrillator.
	41.09	Discuss the various types of automated external defibrillators.
	41.10	Differentiate between the fully automated and the semi-automated defibrillator.
	41.11	Understand the importance of maintenance and operators check list for AED's.
	41.12	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.
	41.13	Explain the role medical direction plays in the use of automated external defibrillation.
42.0		Apply knowledge of toxicology to provide care for a patient with a poisoning or overdose emergency. – The students will be able to:

	42.01	Define toxicology, poisoning & overdose.
	42.02	List various ways that poisons enter the body.
	42.03	List signs/symptoms associated with poisoning.
	42.04	Discuss & demonstrate the emergency medical care for the pediatric, adult and geriatric patient with poisoning or overdose.
	42.05	State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects and re-assessment strategies for activated charcoal.
	42.06	Perform the necessary steps required to provide a patient with activated charcoal.
43.0		Apply knowledge to provide care for a patient with a respiratory emergency. – The students will be able to:
	43.01	List the structure, function and pathophysiology of the respiratory system.
	43.02	List signs of adequate air exchange.
	43.03	State the signs and symptoms of a patient with respiratory distress.
	43.04	Describe & demonstrate the assessment & medical care of the pediatric, adult and geriatric patient with a respiratory emergency.
	43.05	State the generic name, medication forms, dose, administration, action, indications and contraindications for the metered-dose inhaler.
	43.06	Demonstrate the steps in facilitating the use of an inhaler.
	43.07	Differentiate between upper airway obstruction and lower airway disease in the pediatric, adult and geriatric patient.
44.0		Apply knowledge of Hematology to provide care for patients with a clotting disorder or are experiencing a sickle cell disease crisis. – The students will be able to:
	44.01	List the composition, physiology & pathophysiology of blood.
	44.02	State the signs and symptoms of a patient with a Sickle Cell crisis or a clotting disorder.
	44.03	Describe & demonstrate the emergency medical care of the patient with Sickle cell distress or clotting disorder.
45.0		Apply knowledge to provide care for a patient with a genitourinary/renal emergency. – The students will be able to:

	45.01	List the anatomy, physiology & pathophysiology of the renal system.
	45.02	Understand the principles of kidney dialysis.
	45.03	State the signs and symptoms of a patient with a dialysis emergency.
	45.04	Describe & demonstrate the emergency medical care of the patient with a dialysis emergency.
46.0	Apply knowledge to provide care for a patient with a gynecologic emergency. – The students will be able to:	
	46.01	Describe the basic anatomy, physiology and pathophysiology of the female reproductive system.
	46.02	Distinguish between the emergency medical care of the pediatric, adult and geriatric patient experiencing a female reproductive system emergency.
	46.03	Explain the general management of a gynecologic emergency in relation to patient privacy and communication.
	46.04	Discuss the special consideration and precautions an EMT must observe when arriving at the scene of a suspected case of sexual assault or rape.
47.0	Apply knowledge to provide care for a patient with a Non-Traumatic Musculoskeletal emergency. – The students will be able to:	
	47.01	Describe the basic anatomy, physiology and pathophysiology of the skeletal system (i.e. cancer or osteoporosis).
	47.02	Describe & demonstrate the emergency medical care of the patient with a non-traumatic musculoskeletal emergency.
48.0	Describe an overview of the identification, categorization, pathophysiology and assessment of a trauma patient. – The students will be able to:	
	48.01	Discuss and define pathophysiology of the trauma patient
	48.02	Discuss and demonstrate assessment and management of the trauma patient.
	48.03	Discuss and describe significant & non-significant Mechanism of Injury (MOI) & provide examples of each.
	48.04	Discuss and describe State of Florida's trauma scorecard methodologies as required in FS 401.2701 & 64J-2.004 & 2.005.
	48.05	Discuss the National Trauma Triage Protocol of injured Patients (http://cdc.gov/fieldtriage/)
49.0	Demonstrate an understanding and the skills required for the management of a patient with traumatic bleeding. – The students will be able	

	to:	
	49.01	Review the anatomy & physiology of the circulatory system
	49.02	Differentiate between:
		49.02.01 Internal and external bleeding.
		49.02.02 Arterial, venous and capillary bleeding.
	49.03	Explain and demonstrate emergency medical care of the patient with external & internal bleeding.
	49.04	List signs and symptoms of shock (hypo-perfusion).
50.0	Demonstrate an understanding and the skills required for the management of a patient with a chest trauma. – The students will be able to:	
	50.01	Discuss MOI for chest injury (blunt & penetrating, energy & injury).
	50.02	List the anatomy, physiology & pathophysiology of the thoracic/chest cavity & respiratory system.
	50.03	Differentiate between a pneumothorax (open, simple & tension) & hemothorax.
	50.04	Describe and demonstrate the assessment & management of a patient with a suspected chest (open and closed) injury.
51.0	Demonstrate an understanding and the skills required for the management of a patient with an abdominal/genitourinary trauma. – The students will be able to:	
	51.01	Discuss MOI for abdominal injury (blunt & penetrating, energy & injury).
	51.02	List the anatomy, physiology & pathophysiology of the abdominal cavity & genitourinary (both male & female) system.
	51.03	Describe the abdominal quadrants
	51.04	Describe the differences between hollow & solid organs.
	51.05	Describe and demonstrate the assessment & management of a patient with a suspected abdominal (penetrating or blunt) or genitourinary injury.
	51.06	Explain special consideration related to a patient who has experienced an injury by sexual assault/abuse.
52.0	Demonstrate an understanding and the skills required for the management of a patient with an orthopedic trauma. – The students will be	

	able to:
	52.01 Discuss MOI for orthopedic injury (blunt & penetrating, energy & injury).
	52.02 Review the anatomy, physiology & pathophysiology of the musculoskeletal system.
	52.03 Describe the different types of musculoskeletal injuries including fractures, amputations, sprains, & strains.
	52.04 Differentiate between an open and a closed painful, swollen, deformed extremity.
	52.05 Describe and demonstrate the assessment & management of a patient with a suspected orthopedic injury.
53.0	Demonstrate an understanding and the skills required for the management of a patient with a soft tissue trauma. – The students will be able to:
	53.01 Discuss & list the anatomy and physiology, to include the layers, of the skin.
	53.02 Discuss and list the types of open & closed soft tissue injury.
	53.03 Define and list characteristics of superficial, partial-thickness and full-thickness burns.
	53.04 Explain how the seriousness of a burn is related to its depth and extent (percent of body surface area (BSA) involved or rule of 9s) for adult & pediatric patient.
	53.05 Describe and demonstrate the assessment & management of a patient with a soft tissue injury.
54.0	Demonstrate an understanding and the skills required for the management of a patient with a head, facial, or neck (non-spinal) trauma. – The students will be able to:
	54.01 List the anatomy, physiology & pathophysiology of the head, face, & neck.
	54.02 Discuss MOI for head, face, & neck (non-spinal) (blunt & penetrating, energy & injury).
	54.03 Describe and demonstrate the assessment & management of a patient with an injury to the head, face & neck (non-spinal).
55.0	Demonstrate an understanding and the skills required for the management of a patient with a nervous system trauma. – The students will be able to:
	55.01 Review the anatomy, physiology & pathophysiology of the nervous system.

	55.02	Explain functions of the somatic & autonomic nervous system
	55.03	Discuss MOI for head (brain) & spinal (blunt & penetrating, energy & injury).
	55.04	Discuss the different types of brain injuries and their corresponding signs and symptoms, including increased intracranial pressure (ICP), concussion, contusion & injuries caused my medical conditions.
	55.05	Describe and demonstrate the assessment & management of a patient with a head (brain) and spinal injury.
56.0	Demonstrate an understanding of the special considerations for the management of a patient experiencing a trauma during pregnancy. – The students will be able to:	
	56.01	Discuss Anatomy, physiology & pathophysiology of the pregnant trauma patient.
	56.02	Discuss MOI and fetal considerations for the pregnant trauma patient.
	56.03	Discuss & demonstrate unique injuries and conditions along with assessment & management for the pregnant patient involved in trauma.
57.0	Demonstrate an understanding of the special considerations for the management of the pediatric patient experiencing a trauma. – The students will be able to:	
	57.01	Discuss Anatomy, physiology & pathophysiology of the pediatric trauma patient.
	57.02	Discuss & demonstrate unique assessment & management considerations for the pediatric trauma patient.
58.0	Demonstrate an understanding of the special considerations for the management of the geriatric patient experiencing a trauma. – The students will be able to:	
	58.01	Discuss Anatomy, physiology & pathophysiology of the elderly trauma patient.
	58.02	Discuss & demonstrate unique assessment & management considerations for the elderly trauma patient.
59.0	Demonstrate an understanding of the special considerations for the management of the cognitively impaired patient experiencing a trauma. – The students will be able to:	
	59.01	Discuss anatomy, physiology & pathophysiology of the cognitively impaired trauma patient.
	59.02	Discuss & demonstrate unique assessment & management considerations for the cognitively impaired trauma patient.

60.0	Discuss and demonstrate how to assess and manage environmental trauma emergencies. – The students will be able to:	
	60.01	Define drowning and discuss its incidence, rick factors & prevention.
	60.02	List pathophysiologies of water related incidents
	60.03	Describe submersion in salt and fresh water
	60.04	Discuss & demonstrate assessment & management considerations for a patient of a submersion incident.
	60.05	Describe the different types of diving emergencies and how they may occur.
	60.06	List pathophysiologies of dysbarism incidents to include high altitudes and diving incidents.
	60.07	Discuss & demonstrate assessment & management considerations for a patient of a dysbarism incident.
	60.08	Discuss & demonstrate assessment & management considerations for a patient of a lightning incident
	60.09	Explain the five ways a body can lose heat
	60.10	List pathophysiologies of temperature related incidents to include both cold and heat related illness.
	60.11	Discuss & demonstrate assessment & management considerations for a patient of a temperature related illness
	60.12	Identify the species of insects, spiders & snakes in the US that may cause life threatening injuries.
	60.13	Discuss & demonstrate assessment & management considerations for a patient of a bite or envenomation incident.
61.0	Define and articulate the kinematics of trauma. – The students will be able to:	
	61.01	Explain the relationship between mechanism of injury and potential energy, kinetic energy and work.
	61.02	Define term blunt & penetrating trauma and provide examples of the mechanism of injury (MOI) that would cause each to occur and include:
	61.02.01	Affects of high, medium & low velocity penetrating trauma
	61.02.02	Primary, secondary, tertiary and miscellaneous blast injuries
	61.02.03	Factors to consider of a patient injured in a fall

	61.02.04	Consider age (the pediatric, adult and geriatric patient)
62.0	**Describe the components and procedures of a multi-system trauma. – The students will be able to:**	
	62.01	Describe and provide a general overview of multisystem trauma patient management.
	62.02	Discuss the golden principle of out-of-hospital trauma care
	62.03	Discuss & demonstrate assessment & management considerations for a patient of multi system injuries.
63.0	**Apply knowledge of growth development, aging and assessment to the obstetric and neonatal populations. – The students will be able to:**	
	63.01	Review the anatomy, physiology & pathophysiology of the female reproductive system.
	63.02	Explain the normal changes that occur during pregnancy.
	63.03	Differentiate between the stages of labor and delivery.
	63.04	Discuss & demonstrate assessment & management considerations of a pregnancy
	63.05	Discuss assessment & management considerations of complications of pregnancy.
	63.06	Discuss & demonstrate assessment & management considerations of a neonate.
64.0	**Apply knowledge of growth development, aging and assessment to the pediatric population. – The students will be able to:**	
	64.01	List the anatomy, physiology & pathophysiology of the pediatric patient.
	64.02	Describe the differences in anatomy when compared to the adult patient to
	64.03	Discuss & demonstrate assessment & management considerations of a pediatric emergency.
	64.04	The most common causes of the following conditions in the pediatric patient.
	64.04.01	Shock
	64.04.02	Altered mental status and seizures
	64.04.03	Gastrointestinal emergencies
	64.04.04	Poisonings

	64.04.05	Drowning
	64.04.06	Trauma
	64.05	Discuss & demonstrate assessment & management considerations for Sudden Unexplained Infant Death Syndrome (SUIDS).
65.0	Apply knowledge of growth development, aging and assessment to the geriatric population. – The students will be able to:	
	65.01	Define and discuss the term "geriatrics."
	65.02	List the anatomy, physiology & pathophysiology of the Geriatric patient.
	65.03	Discuss & demonstrate assessment & management considerations of a geriatric emergency.
66.0	Apply knowledge of growth development, aging and assessment to patients with special challenges. – The students will be able to:	
	66.01	Define and discuss child and elder abuse and neglect and possible indicators of each.
	66.02	Discuss assessment & management considerations of a patient with special needs to include child and elder abuse and neglect, homelessness/poverty, etc.
67.0	Discuss and demonstrate the principles of safely operating a ground ambulance. – The students will be able to:	
	67.01	Discuss the importance of performing regular vehicle & equipment inspection.
	67.02	Describe the general provisions of Florida laws relating to the operation of the ambulance and privileges.
	67.03	Discuss "Due Regard for Safety of All Others" while operating an emergency vehicle.
	67.04	Provide examples of some high risk situations and hazards that may affect the safety of the ambulance and its passengers during both pre-transport & transport.
68.0	Discuss an overview of EMS operations during a multiples casualty incident. – The students will be able to:	
	68.01	Describe the specific condition that would define a mass-casualty incident (MCI) and give examples.
	68.02	Describe primary and secondary triage, how the four triage categories are assigned and how destination decisions are made.
	68.03	Describe how the techniques of triage are performed.

	68.04 Demonstrate how to perform a triage based scenario that involves an MCI.
69.0	Demonstrate knowledge and procedures involved in safely operating in and around an air medical operations landing zone. – The students will be able to:
	69.01 Discuss safe air medical operations
	69.02 Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.
	69.03 Discuss the criteria for utilizing an air medial response
70.0	Discuss correct procedures of extrication to ensure EMS personnel and patient safety during extrication operations. – The students will be able to:
	70.01 Describe the role of the EMT in patient rescue & vehicle extrication
	70.02 Describe personal and patient safety during vehicle extrication.
	70.03 Discuss the factors related to ensuring situational safety at the site of a vehicle extrication
	70.04 Explain the difference between simple access and complex access in vehicle extrication
	70.05 Discuss patient care consideration related to assisting with rapid extrication, providing emergency care to the trapped patient and removing and transferring a patient.
71.0	Discuss the risks and responsibilities of operating during a terrorism event or during a natural or man-made disaster. – The students will be able to:
	71.01 Describe the role of the EMT on the scene of a natural or man-made disaster
	71.02 Define the term international terrorism & domestic terrorism and provide examples of incidents of each.
	71.03 Describe personal & patient safety during a natural or man-made disaster.
	71.04 Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.

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.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6. Hospital activity shall include a minimum of 20 hours of supervised clinical supervision, including 10 hrs in a hospital emergency department. Clinical activity shall include appropriate patient assessment skills, intervention and documentation relevant to each clinical rotation.

Field internship shall include a competency based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include a minimum of 5 emergency runs resulting in patient care and transport appropriate for the EMT. In addition, the patient care component should include minimum competencies in patient assessment, airway management and ventilation, trauma and medical emergencies.

Special Notes

This program meets the Department of Health trauma score card methodologies and SUIDS training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. Programs may also teach domestic violence and prevention of medical errors education and may choose to provide a certificate to the student verifying that this education has been completed.

Please refer to chapter 401 F.S. for more information on disqualification for the EMT license through the Office of Emergency Medical Services (EMS), Department of Health.

An EMT program must be taught by an instructor meeting the qualifications as set forth in 64J-1.0201 FAC.

Students must complete this program, or demonstrate the mastery of skills standards contained in this program, before advancing in either of the other programs in this cluster. Completion of this program should prepare the student for the certification examination approved for the state of Florida.

An American Heart Association or Red Cross certification or equivalent in "professional" BLS is required of all candidates for entrance into an EMT program.

The Student Performance Standards for Emergency Medical Technology-EMT were adapted from the US Department of Transportation (DOT) National EMS Educational Standards for EMT.

Once students have successfully completed the EMT Program, they may be given a certificate stating they have met all Emergency Medical Responder competency requirements.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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 11 credits. When offered at a technical center the standard length of this program is 250 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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Paramedic**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090405
Program Type	College Credit Certificate (CCC)
Program Length	42 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2041 Emergency Medical Technicians and Paramedics
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Emergency Medical Services AS degree program (1351090402).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

This is an instructional program that prepares students for employment as paramedics SOC 29-2041 (Emergency Medical Technicians & Paramedics) to function at the basic pre-hospital paramedic level and treat various medical/trauma conditions, using appropriate equipment and materials. The program prepares students for certification as paramedics in accordance with Chapter 64J-1 of the Florida Administrative Code. The program must be approved by the Department of Health, Office of Emergency Medical Services, and the curriculum must adhere to the US Department of Transportation, National EMS Educational Standards for Paramedic. This is the second level for a career in emergency medical services in Florida.

The content includes but is not limited to: patient assessment, advanced airway management, cardiovascular emergencies, external and internal bleeding and shock, traumatic injuries, fractures, dislocations, sprains, poisoning, heart attack, stroke, diabetes, pharmacology, medication

administration, respiratory emergencies, endocrine emergencies, acute abdomen, communicable diseases, patients with abnormal behavior, substance abuse, the unconscious state, emergency childbirth, pediatric and geriatric emergencies, burns, environmental hazards, communications, documentation, extrication, mass casualty incident, incident command system, and transportation of patient.

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

Standards

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

01.0	Demonstrate knowledge of the health care delivery system and health occupations.
02.0	Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0	Demonstrate legal and ethical responsibilities.
04.0	Demonstrate an understanding of and apply wellness and disease concepts.
05.0	Recognize and practice safety and security procedures.
06.0	Recognize and respond to emergency situations.
07.0	Recognize and practice infection control procedures.
08.0	Demonstrate an understanding of information technology applications in healthcare.
09.0	Demonstrate employability skills.
10.0	Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0	Apply basic math and science skills.
12.0	Demonstrate knowledge of the Paramedic's roles and responsibilities.
13.0	Describe wellness in EMS.
14.0	Describe primary injury prevention.
15.0	Describe medical/legal considerations.
16.0	Describe emergency medical services ethics.
17.0	Apply the general concepts of pathophysiology.
18.0	Demonstrate the knowledge of pharmacology and administer medications.
19.0	Demonstrate the knowledge of the venous circulation and safely administer medications.
20.0	Demonstrate effective therapeutic communications.
21.0	Demonstrate the knowledge of human development and assessment communication strategies.
22.0	Establish and/or maintain a patent airway and ventilation.
23.0	Demonstrate general patient assessment and initial management.
24.0	Demonstrate the technique of a physical exam to perform a patient assessment.
25.0	Demonstrate the ability to apply a process of clinical decision making.
26.0	Describe and demonstrate EMS communication systems.
27.0	Demonstrate proper patient documentation.
28.0	Integrate the principles of kinematics to enhance the patient assessment.
29.0	Implement the proper treatment plan for a patient with shock or hemorrhage.
30.0	Implement the proper treatment plan for a patient with soft tissue trauma.
31.0	Implement the proper treatment plan for a patient with burn injuries.

32.0   Implement the proper treatment plan for a trauma patient with a head injury.
33.0   Implement the proper treatment plan for a patient with suspected spinal injury.
34.0   Implement the proper treatment plan for a patient with suspected thoracic injury.
35.0   Implement the proper treatment plan for a patient with suspected abdominal trauma.
36.0   Implement the proper treatment plan for a patient with suspected musculoskeletal injury.
37.0   Implement the proper treatment plan for a patient with suspected respiratory problems.
38.0   Implement the proper treatment plan for a patient with suspected cardiovascular disease.
39.0   Implement the proper treatment plan for a patient with a suspected neurologic problem.
40.0   Implement the proper treatment plan for a patient with suspected endocrine problem.
41.0   Implement the proper treatment plan for a patient with a suspected allergic or anaphylactic reaction.
42.0   Implement the proper treatment plan for a patient with a suspected gastroenterologic problem.
43.0   Implement the proper treatment plan for a patient with a suspected renal or urologic problem.
44.0   Implement the proper treatment plan for a patient with suspected toxic exposure.
45.0   Implement the proper treatment plan for a hematopoietic patient.
46.0   Implement the proper treatment plan for a patient with suspected environmental problems.
47.0   Implement the proper treatment plan for a patient with suspected infectious or communicable disease.
48.0   Implement the proper treatment plan for a patient with a suspected behavioral emergency.
49.0   Implement the proper treatment plan for a patient with a suspected gynecological emergency.
50.0   Implement the proper treatment plan for a patient with a suspected obstetrical emergency.
51.0   Implement the proper treatment plan for a neonatal emergency.
52.0   Implement the proper treatment plan for a pediatric patient.
53.0   Implement the proper treatment plan for a geriatric patient.
54.0   Implement the proper treatment plan for a patient who has sustained abuse or assault.
55.0   Implement the proper treatment plan for a variety of diverse patients with a suspected emergency.
56.0   Implement the proper treatment plan for the chronic care patient.
57.0   Implement the proper treatment plan for patients with common complaints.
58.0   Demonstrate the proper procedures to ensure safe and effective ground and air transportation.
59.0   Integrate the principles of general incident management and multiple casualty incident management.
60.0   Integrate the principles of rescue awareness management.
61.0   Integrate the principles of human hazard awareness.
62.0   Integrate the principles of general incident management of hazardous materials emergencies.

Florida Department of Education
Student Performance Standards

Program Title: Paramedic
CIP Number: 0351090405
Program Length: 42 credit hours
SOC Code(s): 29-2041

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. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Emergency Medical Services AS degree program (1351090402). At the completion of this program, the student will be able to:
PARAMEDIC: Intended outcomes 12-62 complete the occupational exit of the Paramedic. The outcomes may be taught as one or more modules at the postsecondary level. At the completion of these competencies, the student will have reached OCP B Paramedic.
12.0   Demonstrate knowledge of the paramedic's roles and responsibilities. – At the completion of this unit, the paramedic student will understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers.--The student will be able to:
12.01   Define terms, including but not limited to: EMS systems, licensure, registration, profession, professionalism, health care professional, ethics, peer review, medical direction and protocols.
12.02   Describe the attributes of a paramedic as a health care professional.
12.03   Explain paramedic licensure/ certification, recertification, and reciprocity requirements in his or her state.
12.04   Evaluate the importance of maintaining one's paramedic license/ certification.
12.05   Describe the benefits of paramedic continuing education.
12.06   Discuss the role of national associations and of a national registry agency.
12.07   Discuss Chapter 401, Florida Statutes, and Chapter 64-E, Florida Administrative Code

	12.08	Discuss the roles of various EMS standard setting agencies.
	12.09	Identify the standards (components) of an EMS System as defined by the National Highway Traffic Safety Administration.
	12.10	Describe examples of professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
	12.11	Describe the importance of quality EMS research to the future of EMS.
	12.12	List the primary and additional responsibilities of paramedics.
	12.13	Describe the role of the EMS physician in providing medical direction.
	12.14	Describe the benefits of medical direction, both on-line and off-line.
	12.15	Provide examples of local protocols.
	12.16	Discuss prehospital and out-of-hospital care as an extension of the physician.
	12.17	Describe the relationship between a physician on the scene, the paramedic on the scene, and the EMS physician providing on-line medical direction.
	12.18	Define the role of the paramedic relative to the safety of the crew, the patient, and bystanders.
	12.19	Assess personal practices relative to the responsibility for personal safety, the safety of the crew, the patient, and bystanders.
	12.20	Advocate the need for injury prevention, including abusive situations.
	12.21	Exhibit professional behaviors in the following areas: integrity, empathy, self-motivation, appearance and personal hygiene, self-confidence, communications, time management, teamwork and diplomacy, respect, patient advocacy, and careful delivery of service.
13.0		Describe wellness in EMS. – At the completion of this unit, the paramedic student will understand and value the importance of personal wellness in EMS and serve as a healthy role model for peers. At the completion of this unit, the paramedic student will be able to:
	13.01	Discuss the concept of wellness and its benefits.
	13.02	Discuss how cardiovascular endurance, muscle strength, and flexibility contribute to physical fitness.
	13.03	Describe the impact of shift work on circadian rhythms.
	13.04	Discuss how periodic risk assessments and knowledge of warning signs contribute to cancer and cardiovascular disease prevention.
	13.05	Differentiate proper from improper body mechanics for lifting and moving patients in emergency and non-emergency situations.
	13.06	Describe the problems that a paramedic might encounter in a hostile situation and the techniques used to manage the situation.

	13.07	Describe the equipment available for self-protection when confronted with a variety of adverse situations.
	13.08	Describe the three phases of the stress response.
	13.09	List factors that trigger the stress response.
	13.10	Differentiate between normal/ healthy and detrimental reactions to anxiety and stress.
	13.11	Identify causes of stress in EMS.
	13.12	Identify and describe the defense mechanisms and management techniques commonly used to deal with stress.
	13.13	Describe the components of critical incident stress management (CISM).
	13.14	Describe the needs of the paramedic when dealing with death and dying.
	13.15	Describe the unique challenges for paramedics in dealing with the needs of children and other special populations related to their understanding or experience of death and dying.
	13.16	Discuss the importance of universal precautions and body substance isolation practices.
	13.17	Defend the need to treat each patient as an individual, with respect and dignity.
	13.18	Promote and practice stress management techniques.
	13.19	Defend the need to respect the emotional needs of dying patients and their families.
	13.20	Advocate and practice the use of personal safety precautions in all scene situations.
	13.21	Implement appropriate Joint Commission patient safety goals.
14.0		Describe primary injury prevention. – At the completion of this unit, the paramedic student will be able to integrate the implementation of primary injury prevention activities as an effective way to reduce death, disabilities and health care costs. At the completion of this unit, the paramedic student will be able to:
	14.01	Describe the incidence, morbidity and mortality of unintentional and alleged unintentional events.
	14.02	Identify the human, environmental, and socioeconomic impact of unintentional and alleged unintentional events.
	14.03	Identify health hazards and potential crime areas within the community.
	14.04	Identify the role of EMS in local municipal and community prevention programs.
	14.05	Value the contribution of effective documentation as one justification for funding of prevention programs.
15.0		Describe medical/legal considerations. – At the completion of this unit, the paramedic student will understand the legal issues that impact decisions made in the out-of-hospital environment. At the completion of this unit, the paramedic student will be able to:

	15.01	Differentiate between legal and ethical responsibilities.
	15.02	Differentiate between licensure and certification as they apply to the paramedic.
	15.03	List the specific problems or conditions encountered while providing care that a paramedic is required to report, and identify in each instance to whom the report is to be made.
	15.04	Define terms, including but not limited to, the following: abandonment, battery, breach of duty, consent (expressed, implied, informed, voluntary), DNR orders, duty to act, emancipated minor, false imprisonment, liability, libel, negligence, proximate cause, scope of practice, slander, and tort.
	15.05	Differentiate between the scope of practice and the standard of care for paramedic practice.
	15.06	Discuss the concept of medical direction, including off-line medical direction and on-line medical direction, and its relationship to the standard of care of a paramedic.
	15.07	Describe the four elements that must be present in order to prove negligence.
	15.08	Discuss the legal concept of immunity, including Good Samaritan statutes and governmental immunity, as it applies to the paramedic.
	15.09	Explain the importance and necessity of patient confidentiality and the standards for maintaining patient confidentiality that apply to the paramedic.
	15.10	Differentiate among expressed, informed, implied, and involuntary consent.
	15.11	Given a scenario, demonstrate appropriate patient management and care techniques in a refusal of care situation.
	15.12	Describe what constitutes abandonment.
	15.13	Differentiate between assault and battery and describe how to avoid each.
	15.14	Describe the actions that the paramedic should take to preserve evidence at a crime or accident scene.
	15.15	Describe the importance of providing accurate documentation (oral and written) in substantiating an incident.
	15.16	Describe the characteristics of a patient care report required to make it an effective legal document.
16.0	Describe emergency medical services ethics. – At the completion of this unit, the paramedic student will understand the role that ethics plays in decision making in the out-of-hospital environment. At the completion of this unit, the paramedic student will be able to:	
	16.01	Distinguish between ethical and moral decisions.
	16.02	Identify the premise that should underlie the paramedic's ethical decisions in out-of hospital care.
	16.03	Analyze the relationship between the law and ethics in EMS.
	16.04	Describe the criteria necessary to honor an advance directive in your state.
17.0	Apply the general concepts of pathophysiology. – At the completion of this unit, the paramedic student will be able to apply the general concepts of pathophysiology for the assessment and management of emergency patients. At the completion of this unit, the paramedic	

	student will be able to:
	17.01 Describe cellular injury and cellular death.
	17.02 Describe the factors that precipitate disease in the human body.
	17.03 Discuss analyzing disease risk.
	17.04 Describe environmental risk factors.
	17.05 Discuss familial diseases and associated risk factors.
	17.06 Discuss hypoperfusion.
	17.07 Define terms inluding but not limited to: cardiogenic, hypovolemic, neurogenic, anaphylactic and septic shock.
	17.08 Describe multiple organ dysfunction syndrome.
	17.09 Describe the inflammation response.
	17.10 Describe the systemic manifestations of the inflammation response.
	17.11 Describe the resolution and repair from inflammation.
	17.12 Discuss hypersensitivity.
	17.13 Describe deficiencies in immunity and inflammation.
	17.14 Describe homeostasis as a dynamic steady state.
	17.15 Describe neuroendocrine regulation.
18.0	Demonstrate knowledge of pharmacology and administer medications. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan. At the completion of this unit, the paramedic student will be able to:
	18.01 Differentiate among the chemical, generic (nonproprietary), and trade (proprietary) names of a drug.
	18.02 List the four main sources of drug products.
	18.03 Describe how drugs are classified.
	18.04 List legislative acts controlling drug use and abuse in the United States.
	18.05 Differentiate among Schedule I, II, III, IV, and V substances.
	18.06 Discuss standardization of drugs.

	18.07	Discuss investigational drugs, including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
	18.08	Discuss the paramedic's responsibilities and scope of management pertinent to the administration of medications.
	18.09	List and describe general properties of drugs.
	18.10	List and describe liquid and solid drug forms.
	18.11	List and differentiate all methods and routes of medication administration covered in the current National EMS Scope of Practice Model.
	18.12	Differentiate between enteral and parenteral routes of drug administration.
	18.13	Describe mechanisms of drug action.
	18.14	Describe the process called pharmacokinetics, pharmocodynamics, including theories of drug action, drug-response relationship, factors altering drug responses, predictable drug responses, iatrogenic drug responses, and unpredictable adverse drug responses.
	18.15	Synthesize patient history information and assessment findings to form a field impression.
19.0		Demonstrate knowledge of the venous circulation and safely administer medications. – At the completion of this unit, the paramedic student will be able to safely and precisely access the venous circulation and administer medications. At the completion of this unit, the paramedic student will be able to:
	19.01	Review the specific anatomy and physiology pertinent to medication administration.
	19.02	Review mathematical principles.
	19.03	Discuss formulas as a basis for performing drug calculations.
	19.04	Describe the indications, equipment needed, technique used, precautions, and general principles of peripheral venous or external jugular cannulation.
	19.05	Describe the indications, equipment needed, technique used, precautions, and general principles of intraosseous needle placement and infusion.
	19.06	Discuss the "six rights" of drug administration and correlate these with the principles of medication administration.
	19.07	Describe the use of universal precautions and body substance isolation (BSI) procedures when administering a medication.
	19.08	Describe the equipment needed and general principles of administering oral medications.
	19.09	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the inhalation route.
	19.10	Describe the indications, equipment needed, techniques used, precautions, and general principles of administering medications by the gastric tube.
	19.11	Describe the indications, equipment needed, techniques used, precautions, and general principles of rectal medication administration.

	19.12	Differentiate among the different percutaneous routes of medication administration.
	19.13	Describe the purpose, equipment needed, techniques used, complications, and general principles for obtaining a blood sample.
	19.14	Obtain venous and capillary blood for testing and discuss blood chemistry and normal values as referenced in the National EMS educational guidelines: Paramedic Instructional Guidelines.
	19.15	Synthesize a pharmacologic management plan including medication administration.
	19.16	Demonstrate cannulation of peripheral or external jugular veins.
	19.17	Demonstrate intraosseous needle placement and infusion.
	19.18	Demonstrate clean technique during medication administration.
	19.19	Demonstrate administration of oral medications.
	19.20	Demonstrate administration of medications by the inhalation route.
20.0		Demonstrate effective therapeutic communication. – At the completion of this unit, the paramedic student will be able to integrate the principles of therapeutic communication to effectively communicate with any patient while providing care. At the completion of this unit, the paramedic student will be able to:
	20.01	Identify internal and external factors that affect a patient/ bystander interview conducted by a paramedic.
	20.02	Restate the strategies for developing patient rapport.
	20.03	Summarize the methods to assess mental status based on interview techniques.
	20.04	Discuss the strategies for interviewing a patient who is unmotivated to talk.
	20.05	Summarize developmental considerations of various age groups that influence patient interviewing.
	20.06	Restate unique interviewing techniques necessary to employ with patients who have special needs.
	20.07	Discuss interviewing considerations used by paramedics in cross-cultural communications.
21.0		Demonstrate the knowledge of human development with assessment and communication strategies. – The paramedic student will be able to integrate the physiological, psychological, and sociological changes throughout human development with assessment and communication strategies for patients of all ages. At the completion of this unit, the paramedic student will be able to:
	21.01	Compare the physiological and psychosocial characteristics of an infant with those of an early adult.
	21.02	Compare the physiological and psychosocial characteristics of a toddler with those of an early adult.
	21.03	Compare the physiological and psychosocial characteristics of a pre-school child with those of an early adult.
	21.04	Compare the physiological and psychosocial characteristics of a school-aged child with those of an early adult.

	21.05	Compare the physiological and psychosocial characteristics of an adolescent with those of an early adult.
	21.06	Compare the physiological and psychosocial characteristics of a middle aged adult with those of an early adult.
22.0		Establish and/or maintain a patent airway and ventilation. – At the completion of this unit, the paramedic student will be able to establish and/ or maintain a patent airway, oxygenate, and ventilate a patient. At the completion of this unit, the paramedic student will be able to:
	22.01	Explain the primary objective of airway maintenance.
	22.02	Explain the differences between pediatric, adult and geriatric airway anatomy.
	22.03	Define gag reflex.
	22.04	List the concentration of gases that comprise atmospheric air.
	22.05	Describe the measurement of oxygen in the blood.
	22.06	Describe the measurement of carbon dioxide in the blood.
	22.07	Describe peak expiratory flow.
	22.08	List factors that cause decreased oxygen concentrations in the blood.
	22.09	List the factors that increase and decrease carbon dioxide production in the body.
	22.10	Define pulsus paradoxes.
	22.11	Describe the Sellick (cricoid pressure) maneuver.
	22.12	Describe the use of an oral and nasal airway.
	22.13	Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV).
	22.14	Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
	22.15	Define, identify and describe a tracheostomy, stoma, and tracheostomy tube.
	22.16	Define, identify, and describe a laryngectomy.
	22.17	Describe the special considerations in airway management and ventilation for the pediatric patient.
	22.18	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for rapid sequence intubation with neuromuscular blockade.
	22.19	Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.
	22.20	Describe the indications, contraindications, advantages, disadvantages, complications and equipment for sedation during intubation.

	22.21	Describe the indications, contraindications, advantages, disadvantages and complications for performing an open cricothyrotomy.
	22.22	Demonstrate adequate endotracheal, nasotracheal, subglottic, supraglottic, placement of airway devices.
	22.23	Describe and demonstrate methods of assessment for confirming correct placement of Any airway device
	22.24	Describe the indications, contraindications, advantages, disadvantages, complications, equipment and technique for extubation.
	22.25	Describe methods of endotracheal intubation in the pediatric patient.
	22.26	Perform pulse oximetry.
	22.27	Perform And interpret wave form capnography and colormetric.
23.0		Demonstrate general patient assessment and initial management. - At the completion of this unit, the paramedic student will be able to use the appropriate techniques to obtain a medical history from a patient, and the paramedic student will be able to explain the pathophysiological significance of physical exam findings. At the completion of this unit, the paramedic student will be able to:
	23.01	Describe the techniques of history taking.
	23.02	Demonstrate the importance of empathy when obtaining a health history.
	23.03	Describe the techniques of inspection, palpation, percussion, and auscultation.
	23.04	Describe the evaluation of mental status.
	23.05	Distinguish the importance of abnormal findings of the assessment of the skin.
	23.06	Describe the examination of the head and neck.
	23.07	Differentiate normal and abnormal assessment findings of the mouth and pharynx.
	23.08	Appreciate the limitations of conducting a physical exam in the out-of-hospital environment.
	23.09	Demonstrate the examination of skin, hair and nails.
	23.10	Demonstrate the examination of the head and neck.
	23.11	Demonstrate the examination of the eyes.
	23.12	Demonstrate the examination of the ears.
	23.13	Demonstrate the examination of the nose.
	23.14	Demonstrate the examination of the mouth and pharynx.
	23.15	Demonstrate the examination of the neck.

	23.16	Demonstrate the examination of the thorax and ventilation.
	23.17	Demonstrate the examination of the posterior chest.
	23.18	Demonstrate auscultation of the chest.
	23.19	Demonstrate percussion of the chest.
	23.20	Demonstrate the examination of the arterial pulse including location, rate, rhythm, and amplitude.
	23.21	Demonstrate special examination techniques of the cardiovascular examination.
	23.22	Demonstrate the examination of the abdomen.
	23.23	Demonstrate auscultation of the abdomen.
	23.24	Demonstrate the external visual examination of the female genitalia.
	23.25	Demonstrate the examination of the male genitalia.
	23.26	Demonstrate the examination of the peripheral vascular system.
	23.27	Demonstrate the examination of the musculoskeletal system.
	23.28	Demonstrate the examination of the nervous system.
24.0		Demonstrate techniques of a physical exam to perform a patient assessment. – At the end of this unit, the paramedic student will be able to integrate the principles of history taking and techniques of physical exam to perform a patient assessment. At the completion of this unit, the paramedic student will be able to:
	24.01	Describe common hazards found at the scene of a trauma and a medical patient.
	24.02	Discuss common mechanisms of injury/ nature of illness.
	24.03	Explain the reasons for identifying the need for additional help or assistance.
	24.04	Summarize the reasons for forming a general impression of the patient.
	24.05	Discuss methods of assessing mental status.
	24.06	Categorize levels of consciousness in the pediatric, adult and geriatric patient.
	24.07	Discuss methods of assessing the airway in the pediatric, adult and geriatric patient.
	24.08	State reasons for management of the cervical spine once the patient has been determined to be a trauma patient.
	24.09	Describe methods used for assessing if a patient is breathing.

24.10	Distinguish between methods of assessing breathing in the pediatric, adult and geriatric patient.
24.11	Compare the methods of providing airway care to the pediatric, adult and geriatric patient.
24.12	Differentiate between locating and assessing a pulse in the pediatric, adult and geriatric patient.
24.13	Discuss the need for assessing the patient for external bleeding.
24.14	Describe normal and abnormal findings when assessing skin color, temperature, and condition.
24.15	Explain the reason for prioritizing a patient for care and transport.
24.16	Describe the evaluation of patient's perfusion status based on findings in the initial assessment.
24.17	State the reasons for performing a rapid trauma assessment.
24.18	Discuss the reason for performing a focused history and physical exam.
24.19	Discuss the components of the detailed physical exam in relation to the techniques of examination.
24.20	Discuss the reasons for repeating the initial assessment as part of the on-going assessment.
24.21	Describe the components of the on-going assessment.
24.22	Discuss medical identification devices/ systems.
24.23	Explain the rationale for crew members to evaluate scene safety prior to entering.
24.24	Explain the value of performing an initial assessment.
24.25	Observe various scenarios and identify potential hazards.
24.26	Demonstrate the scene-size-up.
24.27	Demonstrate the techniques for assessing mental status.
24.28	Demonstrate the techniques for assessing the airway.
24.29	Demonstrate the techniques for assessing if the patient is breathing.
24.30	Demonstrate the techniques for assessing if the patient has a pulse.
24.31	Demonstrate the techniques for assessing the patient for external bleeding.
24.32	Demonstrate the techniques for assessing the patient's skin color, temperature, and condition.

24.33	Demonstrate the ability to prioritize patients.
24.34	Perform a detailed physical examination.
24.35	Demonstrate the skills involved in performing the on-going assessment.
25.0	Demonstrate the ability to apply a process of clinical decision making. – At the end of this unit, the paramedic student will be able to apply a process of clinical decision making to use the assessment findings to help form a field impression. At the end of this unit, the paramedic student will be able to:
25.01	Compare the factors influencing medical care in the out-of-hospital environment to other medical settings.
25.02	Differentiate between critical life-threatening, potentially life-threatening, and non life-threatening patient presentations.
25.03	Evaluate the benefits and shortfalls of protocols, standing orders and patient care algorithms.
25.04	Define the components, stages and sequences of the critical thinking process for paramedics.
25.05	Apply the fundamental elements of critical thinking for paramedics.
25.06	Describe the effects of the fight or flight response and the positive and negative effects on a paramedic's decision making.
25.07	Summarize the six R's of putting it all together: Read the patient, Read the scene, React, Reevaluate, Revise the management plan, Review performance.
26.0	Describe and demonstrate EMS communications systems. – At the completion of this unit, the paramedic student will be able to follow an accepted format for dissemination of patient information in verbal form, either in person or over the radio. At the completion of this unit, the paramedic student will be able to:
26.01	Identify the role of verbal, written, and electronic communications in the provision of EMS.
26.02	Describe the phases of communications necessary to complete a typical EMS event.
26.03	Identify the importance of proper terminology when communicating during an EMS event.
26.04	List factors that impede effective verbal communications.
26.05	List factors which enhance verbal communications.
26.06	List factors which impede effective written communications.
26.07	List factors which enhance written communications.
26.08	Recognize the legal status of written communications related to an EMS event.
26.09	Identify the components of the local EMS communications system and describe their function and use.
26.10	Identify and differentiate among the following communications systems: simplex, multiplex, duplex, trunked, digital communications, and cellular telephone.

26.11	Describe the functions and responsibilities of the Federal Communications Commission.
26.12	Describe how an EMS dispatcher functions as an integral part of the EMS team.
26.13	List appropriate information to be gathered by the Emergency Medical Dispatcher.
26.14	Describe information that should be included in patient assessment information verbally reported to medical direction.
26.15	Organize a list of patient assessment information in the correct order for electronic transmission to medical direction according to the format used locally.
27.0	Demonstrate proper patient documentation. – At the completion of this unit, the paramedic student will be able to effectively document the essential elements of patient assessment, care and transport. At the completion of this unit, the paramedic student will be able to:
27.01	Identify the general principles regarding the importance of EMS documentation and ways in which documents are used.
27.02	Identify and use medical terminology correctly.
27.03	Record all pertinent administrative information.
27.04	Analyze the documentation for accuracy and completeness, including spelling.
27.05	Describe the differences between subjective and objective elements of documentation.
27.06	Describe the potential consequences of illegible, incomplete, or inaccurate documentation.
27.07	Describe the special considerations concerning patient refusal of transport.
27.08	Explain how to properly record direct patient or bystander comments.
27.09	Describe the special considerations concerning mass casualty incident documentation.
27.10	Identify and record the pertinent, reportable clinical data of each patient interaction.
27.11	Note and record pertinent negative clinical findings.
27.12	Demonstrate proper completion of an EMS event record used locally.
28.0	Integrate the principles of kinematics to enhance the patient assessment. – At the completion of this unit, the Paramedic student will be able to integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury. At the completion of this unit, the Paramedic student will be able to:
28.01	List and describe the components of a comprehensive trauma system.
28.02	Describe the role of and differences between levels of trauma centers.
28.03	Describe the criteria for transport to a trauma center.

	28.04	Describe the criteria and procedure for air medical transport.
	28.05	Define energy and force as they relate to trauma.
	28.06	Define laws of motion and energy and understand the role that increased speed has on injuries.
	28.07	Describe the pathophysiology of the head, spine, thorax, and abdomen that result from the above forces.
	28.08	List specific injuries and their causes as related to interior and exterior vehicle damage.
	28.09	Describe the kinematics of penetrating injuries.
29.0		Implement the proper treatment plan for a patient with shock or hemorrhage . – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with shock or hemorrhage. At the completion of this unit, the paramedic student will be able to:
	29.01	Describe the epidemiology, including the morbidity/ mortality and prevention strategies, for shock and hemorrhage.
	29.02	Discuss the anatomy and physiology of the cardiovascular system.
	29.03	Discuss the various types and degrees of shock and hemorrhage.
	29.04	Discuss the pathophysiology of hemorrhage and shock.
	29.05	Discuss the assessment findings associated with hemorrhage and shock.
	29.06	Discuss the treatment plan and management of hemorrhage and shock.
	29.07	Discuss the management of external hemorrhage.
	29.08	Differentiate between the administration rate and amount of IV fluid in a patient with controlled versus uncontrolled hemorrhage.
	29.09	Relate internal hemorrhage to the assessment findings of compensated and decompensated hemorrhagic shock.
	29.10	Discuss the management of internal hemorrhage.
	29.11	Describe the effects of decreased perfusion at the capillary level.
	29.12	Relate pulse pressure changes to perfusion status.
	29.13	Relate orthostatic vital sign changes to perfusion status.
	29.14	Define compensated and decompensated hemorrhagic shock.
	29.15	Differentiate between compensated and decompensated shock.
	29.16	Differentiate between the normotensive, hypotensive, or profoundly hypotensive patient.

	29.17	Differentiate between the administration of fluid in the normotensive, hypotensive, or profoundly hypotensive patient.
	29.18	Develop, execute and evaluate a treatment plan based on the field impression for the hemorrhage or shock patient.
30.0		Implement the proper treatment plan for a patient with soft tissue trauma. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma. At the completion of this unit, the paramedic student will be able to:
	30.01	Identify the major functions of the integumentary system.
	30.02	Discuss the pathophysiology of soft tissue injuries.
	30.03	Differentiate between the following types of closed soft tissue injuries: contusions, hematoma and crush injuries.
	30.04	Discuss the assessment findings associated with closed soft tissue injuries.
	30.05	Discuss the management of a patient with closed soft tissue injuries.
	30.06	Differentiate between the following types of open soft tissue injuries: abrasions, lacerations, major arterial lacerations, avulsions, impaled objects, amputations, incisions, crush injuries, blast injuries, and penetrations/punctures.
	30.07	Discuss the incidence, morbidity, and mortality of blast injuries.
	30.08	Predict blast injuries based on mechanism of injury, including primary, secondary and tertiary.
	30.09	Discuss types of trauma, including but not limited to blunt, penetrating, barotrauma and bur
	30.10	Discuss the effects of an explosion within an enclosed space on a patient.
	30.11	Discuss the assessment findings associated with blast injuries.
	30.12	Discuss the management of a patient with a blast injury.
	30.13	Discuss the incidence, morbidity, and mortality of crush injuries.
	30.14	Define crush injury, crush syndrome and compartment syndrome.
	30.15	Discuss the management of a patient with a crush injury.
	30.16	Discuss the pathophysiology of hemorrhage associated with soft tissue injuries, including capillary, venous and arterial.
	30.17	Discuss the assessment findings associated with open soft tissue injuries.
	30.18	Differentiate between the various management techniques for hemorrhage control of open soft tissue injuries, including but not limited to: direct pressure, pressure dressing, and tourniquet application.
	30.19	Integrate pathophysiological principles to the assessment of a patient with a soft tissue injury.

	30.20	Formulate treatment priorities for patients with soft tissue injuries in conjunction with airway/face/neck trauma, thoracic trauma (open/closed), and abdominal trauma.
	30.21	Develop, execute, and evaluate a treatment plan based on the field impression for the patient with soft tissue trauma.
	30.22	Defend the rationale explaining why immediate life-threats must take priority over wound closure.
	30.23	Defend the management regimens for various soft tissue injuries.
	30.24	Demonstrate the proper use of any Morgan® type lens for irrigation of the eye.
31.0		Implement the proper treatment plan for a patient with burn injuries. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the management plan for the patient with a burn injury. At the completion of this unit, the paramedic student will be able to:
	31.01	Describe the epidemiology, including incidence, mortality/ morbidity, risk factors, and prevention strategies for the patient with a burn injury.
	31.02	Describe the pathophysiologic complications and systemic complications of a burn injury.
	31.03	Identify and describe types of burn injuries, including a thermal burn, an inhalation burn, a chemical burn, an electrical burn, and a radiation exposure.
	31.04	Identify and describe the depth classifications of burn injuries, including a superficial burn, a partial-thickness burn, a full-thickness burn, and other depth classifications described by local protocol.
	31.05	Identify and describe methods for determining body surface area percentage of a burn injury including the "rules of nines," the "rules of palms," and other methods described by local protocol.
	31.06	Identify and describe the severity of a burn including a minor burn, a moderate burn, a severe burn, and other severity classifications described by local protocol.
	31.07	Describe special considerations for a pediatric patient with a burn injury.
	31.08	Discuss conditions associated with burn injuries, including trauma, blast injuries, airway compromise, respiratory compromise, and child abuse.
	31.09	Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
	31.10	Describe the pathophysiology of a thermal burn injury.
	31.11	Identify and describe the depth classifications of a thermal burn injury.
	31.12	Describe the pathophysiology of an inhalation burn injury.
	31.13	Describe considerations which impact management and prognosis of the patient with an inhalation burn injury.
	31.14	Describe the management of an inhalation burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/ communication strategies.
	31.15	Describe the pathophysiology of a chemical burn injury, including types of chemicals and their burning processes and a chemical burn injury to the eye.

	31.16	Describe the management of a chemical burn injury and a chemical burn injury to the eye, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/ communication strategies.
	31.17	Identify and describe the severity of an electrical burn injury.
	31.18	Discuss mechanisms of burn injury and conditions associated with an electrical burn injury.
	31.19	Describe the management of an electrical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/ communication strategies.
	31.20	Describe the pathophysiology of a radiation exposure, including the types and characteristics of ionizing radiation.
	31.21	Identify and describe the severity of a radiation exposure.
	31.22	Describe the management of a radiation exposure, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/ communication strategies.
	31.23	Develop, execute and evaluate a management plan based on the field impression for the patient with thermal, inhalation, chemical, electrical, and radiation burn injuries.
	31.24	Perform management of a thermal burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
	31.25	Perform management of an inhalation burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
	31.26	Perform management of a chemical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
	31.27	Perform management of an electrical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
	31.28	Perform management of a radiation exposure, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/ communication strategies, and other management described by local protocol.
32.0		Implement the proper treatment plan for a trauma patient with a head injury. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the trauma patient with a suspected head injury. At the completion of this unit, the paramedic student will be able to:
	32.01	Differentiate between facial injuries based on the assessment and history.
	32.02	Develop a patient management plan for a patient with a facial injury based on the field impression.
	32.03	Relate assessment findings associated with eye injuries to pathophysiology.
	32.04	Develop a patient management plan for a patient with an eye injury based on the field impression.
	32.05	Formulate a field impression for a patient with an ear injury based on the assessment findings.
	32.06	Develop a patient management plan for a patient with an ear injury based on the field impression.

	32.07	Formulate a field impression for a patient with a nose injury based on the assessment findings.
	32.08	Develop a patient management plan for a patient with a nose injury based on the field impression.
	32.09	Formulate a field impression for a patient with a throat injury based on the assessment findings.
	32.10	Develop a patient management plan for a patient with a throat injury based on the field impression.
	32.11	Formulate a field impression for a patient with a mouth injury based on the assessment findings.
	32.12	Develop a patient management plan for a patient with a mouth injury based on the field impression.
	32.13	Distinguish between head injury and brain injury.
	32.14	Define and explain the process involved with each of the levels of increasing ICP.
	32.15	Identify the need for rapid intervention and transport of the patient with a head/brain injury.
	32.16	Describe and explain the general management of the head/ brain injury patient, including pharmacological and non-pharmacological treatment.
	32.17	Explain the pathophysiology of skull fracture.
	32.18	Develop a management plan for a patient with a skull fracture.
	32.19	Develop a management plan for a patient with a cerebral contusion.
	32.20	Explain the pathophysiology of intracranial hemorrhage, including epidural, subdural, intracerebral, and subarachnoid.
	32.21	Develop a management plan for a patient with a intracranial hemorrhage, including epidural, subdural, intracerebral and subarachnoid.
33.0		Implement the proper treatment plan for a patient with a suspected spinal injury. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a suspected spinal injury. At the completion of this unit, the paramedic student will be able to:
	33.01	Describe the pathophysiology of spinal injuries.
	33.02	Describe the assessment findings associated with spinal injuries.
	33.03	Describe the management of spinal injuries.
	33.04	Develop a patient management plan based on the field impression.
	33.05	Describe the pathophysiology of traumatic spinal injury related to spinal shock, spinal neurogenic shock, quadriplegia/paraplegia, and incomplete cord injury/cord syndromes, including central cord syndrome, anterior cord syndrome and Brown-Sequard syndrome.
	33.06	Describe the assessment findings associated with traumatic spinal injuries.

	33.07	Describe the management of traumatic spinal injuries.
	33.08	Differentiate between traumatic and non-traumatic spinal injuries based on the assessment and history.
	33.09	Develop a patient management plan for traumatic spinal injury based on the field impression.
	33.10	Describe the pathophysiology of non-traumatic spinal injury, including but not limited to, low back pain, herniated intervertebral disk and spinal cord tumors.
	33.11	Describe the management of non-traumatic spinal injuries.
	33.12	Differentiate between traumatic and non-traumatic spinal injuries based on the assessment and history.
	33.13	Develop a patient management plan for non-traumatic spinal injury based on the field impression.
	33.14	Demonstrate a clinical assessment to determine the proper management modality for a patient with a suspected traumatic spinal injury.
	33.15	Demonstrate a clinical assessment to determine the proper management modality for a patient with a suspected non-traumatic spinal injury.
	33.16	Demonstrate immobilization of the urgent and non-urgent patient with assessment findings of spinal injury from the following presentations: Supine, Prone, Semi-prone, Sitting, Standing
	33.17	Demonstrate preferred methods for stabilization of a helmet from a potentially spine injured patient.
	33.18	Demonstrate helmet removal techniques.
34.0		Implement the proper treatment plan for a patient with a suspected thoracic injury. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for a patient with a thoracic injury. At the completion of this unit, the paramedic student will be able to:
	34.01	Discuss the anatomy and physiology of the organs and structures related to thoracic injuries.
	34.02	Discuss the pathophysiology of thoracic injuries.
	34.03	Discuss the management of thoracic injuries.
	34.04	Identify the need for rapid intervention and transport of the patient with thoracic injuries.
	34.05	Discuss the pathophysiology of specific chest wall injuries, including rib fracture, flail segment, and sternal fracture.
	34.06	Identify the need for rapid intervention and transport of the patient with chest wall injuries.
	34.07	Discuss the management of chest wall injuries.
	34.08	Discuss the pathophysiology of injury to the lung, including but not limited to simple, open and tension pneumothorax, hemothorax, hemopneumothorax, and pulmonary contusion.
	34.09	Discuss the management of lung injuries.

	34.10	Assist with the insertion of a chest tube and when in place monitor and manage chest tube patency.
	34.11	Discuss the pathophysiology of myocardial injuries, including but not limited to pericardial tamponade, myocardial contusion and myocardial rupture.
	34.12	Discuss the management of myocardial injuries.
	34.13	Discuss the pathophysiology of vascular injuries, including injuries to the aorta, vena cava, and pulmonary arteries and veins.
	34.14	Discuss the management of vascular injuries.
	34.15	Discuss the pathophysiology of tracheo-bronchial injuries.
	34.16	Discuss the management of tracheo-bronchial injuries.
	34.17	Discuss the pathophysiology of traumatic asphyxia.
	34.18	Discuss the assessment findings associated with traumatic asphyxia.
	34.19	Discuss the management of traumatic asphyxia.
	34.20	Demonstrate a clinical assessment for a patient with suspected thoracic trauma.
	34.21	Demonstrate the following techniques of management for thoracic injuries: Needle decompression, Fracture stabilization, Elective intubation, ECG monitoring Oxygenation and ventilation
35.0		Implement the proper treatment plan for a patient with a suspected abdominal trauma. – At the completion of this unit, the paramedic student will be able to integrate pathophysiologic principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with suspected abdominal trauma. At the completion of this unit, the paramedic student will be able to:
	35.01	Describe the anatomy and physiology of organs and structures related to abdominal injuries.
	35.02	Describe open and closed abdominal injuries.
	35.03	Explain the pathophysiology of abdominal injuries.
	35.04	Describe the management of abdominal injuries.
	35.05	Describe the assessment findings associated with solid organ injuries.
	35.06	Describe the treatment plan and management of solid organ injuries.
	35.07	Describe the assessment findings associated with hollow organ injuries.
	35.08	Describe the treatment plan and management of hollow organ injuries.
	35.09	Describe the assessment findings associated with pelvic fractures.

	35.10	Describe the treatment plan and management of pelvic fractures.
	35.11	Develop a patient management plan for a patient with abdominal injuries, based upon field impression.
36.0	Implement the proper treatment plan for a patient with a suspected musculoskeletal injury. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with a musculoskeletal injury. At the completion of this unit, the paramedic student will be able to:	
	36.01	Discuss the anatomy and physiology of the musculoskeletal system.
	36.02	Discuss types of musculoskeletal injuries, including fracture (open and closed), dislocation/fracture, sprain, and strain.
	36.03	Discuss the pathophysiology of musculoskeletal injuries.
	36.04	Discuss the assessment findings associated with musculoskeletal injuries.
	36.05	Discuss the management of musculoskeletal injuries.
	36.06	Discuss the general guidelines for splinting.
	36.07	Discuss the pathophysiology of open and closed fractures.
	36.08	Discuss the assessment findings associated with fractures.
	36.09	Discuss the management of fractures.
	36.10	Discuss the pathophysiology of dislocations.
	36.11	Discuss the out-of-hospital management of dislocation/fractures, including splinting and realignment.
	36.12	Explain the importance of manipulating a knee dislocation/fracture with an absent distal pulse.
	36.13	Discuss the assessment findings of sprains.
	36.14	Discuss the management of sprains.
	36.15	Discuss the management of strains.
	36.16	Discuss the management of a tendon injury.
	36.17	Develop a patient management plan for the musculoskeletal injury based on the field impression.
	36.18	Demonstrate a clinical assessment to determine the proper treatment plan for a patient with a suspected musculoskeletal injury.
	36.19	Demonstrate the proper use of fixation, soft and traction splints for a patient with a suspected fracture.
37.0	Implement the proper treatment plan for a patient with suspected respiratory problems. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the	

		treatment plan for the patient with respiratory problems. At the completion of this unit, the paramedic student will be able to:
	37.01	Identify and describe the function of the structures located in the upper and lower airway.
	37.02	Discuss the physiology of ventilation and respiration.
	37.03	Discuss abnormal assessment findings associated with pulmonary diseases and conditions.
	37.04	Compare various airway and ventilation techniques used in the management of pulmonary diseases.
	37.05	Review the pharmacological preparations that paramedics use for management of respiratory diseases and conditions.
	37.06	Review the use of equipment used during the physical examination of patients with complaints associated with respiratory diseases and conditions.
	37.07	Identify the epidemiology, anatomy, physiology, pathophysiology, assessment findings, and management for, but not limited to the following: adult respiratory distress syndrome, chronic bronchitis, bronchial asthma, emphysema, pneumonia, pulmonary edema, pulmonary thromboembolism, neoplasms of the lung, upper respiratory infections, spontaneous pneumothorax and hyperventilation syndrome.
	37.08	Demonstrate proper use of airway and ventilation devices including administration of BIPAP/CPAP and PEEP devices,
	37.09	Conduct a history and patient assessment for patients with pulmonary diseases and conditions.
38.0		Implement the proper treatment plan for a patient with suspected cardiovascular disease. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with cardiovascular disease. At the completion of this unit, the paramedic student will be able to:
	38.01	Identify the risk factors most predisposing to coronary artery disease.
	38.02	Describe the anatomy of the heart, including the position in the thoracic cavity, layers of the heart, chambers of the heart, and location and function of cardiac valves.
	38.03	Identify the major structures of the vascular system.
	38.04	Identify and define the components of cardiac output.
	38.05	Identify phases of the cardiac cycle.
	38.06	Identify the structure and course of all divisions and subdivisions of the cardiac conduction system.
	38.07	Identify and describe how the heart's pacemaking control, rate, and rhythm are determined.
	38.08	Describe the clinical significance of Starling's law.
	38.09	Identify the structures of the autonomic nervous system (ANS).
	38.10	Identify the effect of the ANS on heart rate, rhythm and contractility.

38.11	Identify and describe the components of the focused history as it relates to the patient with cardiovascular compromise.
38.12	Explain the purpose of ECG monitoring.
38.13	Correlate the electrophysiological and hemodynamic events occurring throughout the entire cardiac cycle with the various ECG wave forms, segments and intervals.
38.14	Given an ECG, identify the arrhythmia.
38.15	Describe a systematic approach to the analysis and interpretation of cardiac arrhythmias.
38.16	Describe the arrhythmias originating in the sinus node, the AV junction, the atria, and the ventricles.
38.17	Describe the arrhythmias originating or sustained in the AV junction.
38.18	Describe the abnormalities originating within the bundle branch system.
38.19	Describe the conditions of pulseless electrical activity.
38.20	Recognize the changes on the ECG that may reflect evidence of myocardial ischemia and injury.
38.21	Identify the major therapeutic objectives in the treatment of the patient with any arrhythmia.
38.22	Identify the clinical indications for transcutaneous and permanent artificial cardiac pacing.
38.23	Describe the techniques of applying a transcutaneous pacing system.
38.24	List the possible complications of pacing.
38.25	Describe the epidemiology, morbidity and mortality, and pathophysiology of angina pectoris.
38.26	List other clinical conditions that may mimic signs and symptoms of coronary artery disease and angina pectoris.
38.27	Identify the paramedic responsibilities associated with management of the patient with angina pectoris.
38.28	Describe the epidemiology, morbidity and mortality of myocardial infarction.
38.29	List and describe the assessment parameters to be evaluated in a patient with a suspected myocardial infarction.
38.30	List the characteristics of a patient eligible for thrombolytic therapy.
38.31	Initiate and monitor thrombolytic therapy.
38.32	Describe the most commonly used cardiac drugs in terms of therapeutic effect and dosages, routes of administration, side effects and toxic effects.
38.33	Define the term "acute pulmonary edema" and describe its relationship to left ventricular failure.

38.34	Define preload, afterload and left ventricular end-diastolic pressure and relate each to the pathophysiology of heart failure.
38.35	Differentiate between early and late signs and symptoms of left ventricular failure and those of right ventricular failure.
38.36	Explain the clinical significance of paroxysmal nocturnal dyspnea.
38.37	List the interventions prescribed for the patient in acute congestive heart failure.
38.38	Describe the most commonly used pharmacological agents in the management of congestive heart failure in terms of therapeutic effect, dosages, routes of administration, side effects and toxic effects.
38.39	Define the term "cardiac tamponade".
38.40	Identify the paramedic responsibilities associated with management of a patient with cardiac tamponade.
38.41	Define the term "hypertensive emergency".
38.42	Describe the clinical features of the patient in a hypertensive emergency.
38.43	Identify the drugs of choice for hypertensive emergencies, rationale for use, clinical precautions and disadvantages of selected antihypertensive agents.
38.44	Define the term "cardiogenic shock".
38.45	Describe the most commonly used pharmacological agents in the management of cardiogenic shock in terms of therapeutic effects, dosages, routes of administration, side effects and toxic effects.
38.46	Define the term "cardiac arrest".
38.47	Describe the arrhythmias seen in cardiac arrest.
38.48	Define the terms defibrillation and synchronized cardioversion.
38.49	Describe the most commonly used pharmacological agents in the management of cardiac arrest in terms of therapeutic effects.
38.50	Identify the major factors involved in the pathophysiology of aortic aneurysm.
38.51	Recognize and describe the signs and symptoms of dissecting thoracic or abdominal aneurysm.
38.52	Differentiate between signs and symptoms of cardiac tamponade, hypertensive emergencies, cardiogenic shock, and cardiac arrest.
38.53	Develop, execute, and evaluate a treatment plan based on field impression for the patient in need of a pacemaker.
38.54	Develop, execute and evaluate a treatment plan based on the field impression for the patient with chest pain.
38.55	Develop, execute and evaluate a treatment plan based on the field impression for the suspected myocardial infarction patient.
38.56	Develop, execute, and evaluate a treatment plan based on the field impression for the heart failure patient.

	38.57	Develop, execute and evaluate a treatment plan based on the field impression for the patient with cardiac tamponade.
	38.58	Develop, execute and evaluate a treatment plan based on the field impression for the patient with a hypertensive emergency.
	38.59	Develop, execute, and evaluate a treatment plan based on the field impression for the patient with cardiogenic shock.
	38.60	Demonstrate a working knowledge of various ECG lead systems.
	38.61	Set up and apply a transcutaneous pacing system.
	38.62	Demonstrate satisfactory performance of psychomotor skills of basic and advanced life support techniques according to the current American Heart Association Guidelines or its equivalent, including: cardiopulmonary resuscitation, defibrillation, synchronized cardioversion, and transcutaneous pacing. As per online or offline medical control eliminate resuscitation efforts.
39.0		Implement the proper treatment plan for a patient with a suspected neurologic problem. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a neurological problem. At the completion of this unit, the paramedic student will be able to:
	39.01	Identify the risk factors most predisposing to the nervous system.
	39.02	Discuss the anatomy and physiology of the organs and structures related to nervous system.
	39.03	Discuss the assessment findings associated with non-traumatic neurologic emergencies.
	39.04	Discuss the management of non-traumatic neurological emergencies.
	39.05	Discuss the pathophysiology of coma and altered mental status.
	39.06	Discuss the management/treatment plan of coma and altered mental status.
	39.07	Describe and differentiate the major types of seizures.
	39.08	Discuss the assessment findings associated with syncope.
	39.09	Discuss the management/treatment plan of syncope.
	39.10	Describe the types of stroke and intracranial hemorrhage.
	39.11	Discuss the assessment findings associated with stroke and intracranial hemorrhage.
	39.12	Discuss the management/treatment plan of stroke and intracranial hemorrhage.
	39.13	Discuss the assessment findings associated with transient ischemic attack.
	39.14	Discuss the management/treatment plan of transient ischemic attack.
	39.15	Discuss the assessment findings associated with degenerative neurological diseases.

	39.16	Discuss the management/treatment plan of degenerative neurological diseases.
	39.17	Differentiate among the various treatment and pharmacological interventions used in the management of degenerative neurological diseases.
	39.18	Perform an appropriate assessment of a patient with coma or altered mental status.
	39.19	Perform a complete neurological examination as part of the comprehensive physical examination of a patient with coma or altered mental status.
	39.20	Appropriately manage a patient with coma or altered mental status, including the administration of oxygen, oral glucose, 50% dextrose and narcotic reversal agents.
	39.21	Perform an appropriate assessment of a patient with syncope.
	39.22	Appropriately manage a patient with syncope.
	39.23	Appropriately manage a patient with seizures, including the administration of diazepam or lorazepam.
	39.24	Perform an appropriate assessment of a patient with stroke and intracranial hemorrhage or TIA.
	39.25	Appropriately manage a patient with stroke and intracranial hemorrhage or TIA.
40.0		Implement the proper treatment plan for a patient with a suspected endocrine problem. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an endocrine problem. At the completion of this unit, the paramedic student will be able to:
	40.01	Identify the risk factors most predisposing to endocrinologic disease.
	40.02	Discuss the anatomy and physiology of organs and structures related to endocrinologic diseases.
	40.03	Discuss the general assessment findings associated with endocrinologic emergencies.
	40.04	Discuss the management of endocrinologic emergencies.
	40.05	Discuss the management of diabetic emergencies.
	40.06	Differentiate between the pathophysiology of normal glucose metabolism and diabetic glucose metabolism.
	40.07	Describe the mechanism of ketone body formation and its relationship to ketoacidosis.
	40.08	Recognize the signs and symptoms of the patient with hypoglycemia.
	40.09	Describe the compensatory mechanisms utilized by the body to promote homeostasis relative to hypoglycemia.
	40.10	Describe the management of a responsive hypoglycemic patient.
	40.11	Correlate abnormal findings in assessment with clinical significance in the patient with hypoglycemia.

	40.12	Recognize the signs and symptoms of the patient with hyperglycemia.
	40.13	Describe the management of hyperglycemia.
	40.14	Discuss the pathophysiology of diabetic ketoacidosis.
	40.15	Recognize the signs and symptoms of the patient with diabetic ketoacidosis.
	40.16	Describe the management of diabetic ketoacidosis.
	40.17	Discuss the pathophysiology of Cushing's syndrome.
	40.18	Recognize signs and symptoms of the patient with Cushing's syndrome.
	40.19	Describe the management of Cushing's syndrome.
	40.20	Discuss the pathophysiology of adrenal Insufficiency.
	40.21	Recognize signs and symptoms of the patient with adrenal insufficiency.
	40.22	Describe the management of adrenal insufficiency.
	40.23	Develop a patient management plan based on field impression in the patient with an endocrinologic emergency.
41.0		Implement the proper treatment plan for a patient with a suspected allergic or anaphylactic reaction. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction. At the completion of this unit, the paramedic student will be able to:
	41.01	Define allergic reaction.
	41.02	Define anaphylaxis.
	41.03	Discuss the anatomy and physiology of the organs and structures related to anaphylaxis.
	41.04	Describe the prevention of anaphylaxis and appropriate patient education.
	41.05	Discuss the pathophysiology of allergy and anaphylaxis.
	41.06	Describe the common methods of entry of substances into the body.
	41.07	Define antigens and antibodies.
	41.08	List common antigens most frequently associated with anaphylaxis.
	41.09	Describe physical manifestations in anaphylaxis.

	41.10	Differentiate manifestations of an allergic reaction from anaphylaxis.
	41.11	Recognize the signs and symptoms related to anaphylaxis.
	41.12	Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis.
	41.13	Develop a treatment plan based on field impression in the patient with allergic reaction and anaphylaxis.
42.0		Implement the proper treatment plan for a patient with a suspected gastroenterologic problem. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a gastroenterologic problem. At the conclusion of this unit, the paramedic student will be able to:
	42.01	Discuss the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
	42.02	Discuss the pathophysiology of inflammation and its relationship to acute abdominal pain.
	42.03	Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.
	42.04	Discuss the signs and symptoms of peritoneal inflammation relative to acute abdominal pain.
	42.05	Describe the questioning technique and specific questions the paramedic should ask when gathering a focused history in a patient with abdominal pain.
	42.06	Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.
	42.07	Define upper gastrointestinal bleeding.
	42.08	Recognize the signs and symptoms related to upper gastrointestinal bleeding.
	42.09	Describe the management for upper gastrointestinal bleeding.
	42.10	Recognize the signs and symptoms related to lower gastrointestinal bleeding.
	42.11	Describe the management for lower gastrointestinal bleeding.
	42.12	Define acute gastroenteritis.
	42.13	Recognize the signs and symptoms related to acute gastroenteritis.
	42.14	Describe the management for acute gastroenteritis.
	42.15	Recognize the signs and symptoms related to colitis.
	42.16	Describe the management for colitis.
	42.17	Recognize the signs and symptoms related to gastroenteritis.

42.18	Describe the management for gastroenteritis.
42.19	Recognize the signs and symptoms related to diverticulitis.
42.20	Describe the management for diverticulitis.
42.21	Recognize the signs and symptoms related to appendicitis.
42.22	Describe the management for appendicitis.
42.23	Recognize the signs and symptoms related to peptic ulcer disease.
42.24	Describe the management for peptic ulcer disease.
42.25	Recognize the signs and symptoms related to bowel obstruction.
42.26	Describe the management for bowel obstruction.
42.27	Recognize the signs and symptoms related to Crohn's disease.
42.28	Describe the management for Crohn's disease.
42.29	Recognize the signs and symptoms related to pancreatitis.
42.30	Describe the management for pancreatitis.
42.31	Recognize the signs and symptoms related to esophageal varices.
42.32	Describe the management for esophageal varices.
42.33	Recognize the signs and symptoms related to hemorrhoids.
42.34	Describe the management for hemorrhoids.
42.35	Recognize the signs and symptoms related to cholecystitis.
42.36	Describe the management for cholecystitis.
42.37	Recognize the signs and symptoms related to acute hepatitis.
42.38	Describe the management for acute hepatitis.
42.39	Differentiate between gastrointestinal emergencies based on assessment findings.
42.40	Correlate abnormal findings in the assessment with the clinical significance in the patient with abdominal pain.

	42.41	Develop a patient management plan based on field impression in the patient with abdominal pain.
43.0		Implement the proper treatment plan for a patient with a suspected renal or urologic problem. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a renal or urologic problem. At the conclusion of this unit, the paramedic student will be able to:
	43.01	Describe the incidence, morbidity, mortality, and risk factors predisposing to urological emergencies.
	43.02	Discuss the anatomy and physiology of the organs and structures related to urogenital diseases.
	43.03	Define referred pain and visceral pain as it relates to urology.
	43.04	Describe the technique for performing a comprehensive physical examination of a patient complaining of abdominal pain.
	43.05	Discuss the pathophysiology of acute renal failure.
	43.06	Recognize the signs and symptoms related to acute renal failure.
	43.07	Describe the management for acute renal failure.
	43.08	Define chronic renal failure.
	43.09	Define renal dialysis.
	43.10	Discuss the common complication of renal dialysis.
	43.11	Discuss the pathophysiology of renal calculi.
	43.12	Recognize the signs and symptoms related to renal calculi.
	43.13	Describe the management for renal calculi.
	43.14	Discuss the pathophysiology of urinary tract infection.
	43.15	Recognize the signs and symptoms related to urinary tract infection.
	43.16	Describe the management for a urinary tract infection.
	43.17	Apply the epidemiology to develop prevention strategies for urological emergencies.
	43.18	Integrate pathophysiological principles to the assessment of a patient with abdominal pain.
	43.19	Synthesize assessment findings and patient history information to accurately differentiate between pain of a urogenital emergency and that of other origins.
	43.20	Develop, execute, and evaluate a treatment plan based on the field impression made in the assessment.
44.0		Implement the proper treatment plan for a patient with a suspected toxic exposure. – At the completion of this unit, the paramedic student

	will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with a toxic exposure. At the completion of this unit, the paramedic student will be able to:
44.01	Describe the incidence, morbidity and mortality of toxic emergencies.
44.02	Identify the risk factors most predisposing to toxic emergencies.
44.03	Describe the routes of entry of toxic substances into the body.
44.04	Discuss the role of the Poison Control Center in the United States.
44.05	Discuss the assessment findings associated with various toxidromes.
44.06	Discuss the management of toxic substances.
44.07	List the most common poisonings by ingestion.
44.08	Recognize the signs and symptoms related to the most common poisonings by ingestion.
44.09	Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by ingestion.
44.10	Discuss the factors affecting the decision to induce vomiting in a patient with ingested poison.
44.11	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by ingestion.
44.12	Define poisoning by inhalation.
44.13	List the most common poisonings by inhalation.
44.14	Describe the pathophysiology of poisoning by inhalation.
44.15	Recognize the signs and symptoms related to the most common poisonings by inhalation.
44.16	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by inhalation.
44.17	Define poisoning by injection.
44.18	List the most common poisonings by injection.
44.19	Recognize the signs and symptoms related to the most common poisonings by injection.
44.20	Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by injection.
44.21	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by injection.

44.22	Define poisoning by surface absorption.
44.23	List the most common poisonings by surface absorption.
44.24	Describe the pathophysiology of poisoning by surface absorption.
44.25	Recognize the signs and symptoms related to the most common poisonings by surface absorption.
44.26	Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by surface absorption.
44.27	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by surface absorption.
44.28	Define poisoning by overdose.
44.29	List the most common poisonings by overdose.
44.30	Describe the pathophysiology of poisoning by overdose.
44.31	Recognize the signs and symptoms related to the most common poisonings by overdose.
44.32	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by overdose.
44.33	Define drug abuse.
44.34	Define the following terms: Substance or drug abuse, Substance or drug dependence,Tolerance,Withdrawal, Addiction
44.35	List the most commonly abused drugs (both by chemical name and street names).
44.36	Describe the pathophysiology of commonly used drugs.
44.37	Recognize the signs and symptoms related to the most commonly abused drugs.
44.38	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients using the most commonly abused drugs.
44.39	List the clinical uses, street names, pharmacology, assessment finding and management for patient who have taken the following drugs or been exposed to the following substances: Cocaine, marijuana and cannabis compounds, Amphetamines and amphetamine-like drugs, Barbiturates, Sedative-hypnotics, Cyanide, Narcotics/opiates, cardiac medications, Caustics, common household substances, Drugs abused for sexual purposes/sexual gratification, Carbon monoxide, Alcohols, Hydrocarbons, Psychiatric medications, Newer anti-depressants and serotonin syndromes, Lithium, MAO inhibitors, Non-prescription pain medications, Nonsteroidal anti-inflammatory agents, Salicylates, Acetaminophen, Theophylline, Metals, Plants and mushrooms
44.40	Discuss common causative agents, pharmacology, assessment findings and management for a patient with food poisoning.
44.41	Discuss common offending organisms, pharmacology, assessment findings and management for a patient with a bite or sting.

	44.42 Develop a patient management plan based on field impression in the patient exposed to a toxic substance.
45.0	Implement the proper treatment plan for a patient with a suspected hematopoietic patient. – At the completion of this unit, the paramedic student will be able to integrate the pathophysiological principles of the hematopoietic system to formulate a field impression and implement a treatment plan. At the completion to this unit, the paramedic student will be able to:
	45.01 Identify the anatomy of the hematopoietic system.
	45.02 Describe volume and volume-control related to the hematopoietic system.
	45.03 Describe normal red blood cell (RBC) production, function and destruction.
	45.04 Explain the significance of the hematocrit with respect to red cell size and number.
	45.05 Explain the correlation of the RBC count, hematocrit and hemoglobin values.
	45.06 Define anemia.
	45.07 Describe normal white blood cell (WBC) production, function and destruction.
	45.08 Identify alterations in immunologic response.
	45.09 List the leukocyte disorders.
	45.10 Describe platelets with respect to normal function, life span and numbers.
	45.11 Describe the components of the hemostatic mechanism.
	45.12 Describe the function of coagulation factors, platelets and blood vessels necessary for normal coagulation.
	45.13 Identify blood groups.
	45.14 Identify the components of physical assessment as they relate to the hematologic system.
	45.15 Describe the pathology and clinical manifestations and prognosis associated with Anemia, Leukemia, Lymphomas, Polycythemia, Disseminated intravascular coagulopathy Hemophilia, Sickle cell disease, Multiple myeloma
	45.16 Integrate pathophysiological principles into the assessment of a patient with hematologic disease.
	45.17 Perform an assessment of the patient with hematologic disorder.
46.0	Implement the proper treatment plan for a patient with a suspected environmental problem. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with an environmentally induced or exacerbated medical or traumatic condition. At the completion of this unit, the paramedic student will be able to:
	46.01 Define "environmental emergency."

46.02	Identify environmental factors that may cause illness or exacerbate a preexisting illness.
46.03	Identify environmental factors that may complicate treatment or transport decisions.
46.04	List the principal types of environmental illnesses.
46.05	Describe several methods of temperature monitoring.
46.06	Identify the components of the body's thermoregulatory mechanism.
46.07	Describe the general process of thermal regulation, including substances used and wastes generated.
46.08	Describe the body's compensatory process for over heating.
46.09	Describe the body's compensatory process for excess heat loss.
46.10	List the common forms of heat and cold disorders.
46.11	Integrate the pathophysiological principles and complicating factors common to environmental emergencies and discuss differentiating features between emergent and urgent presentations.
46.12	Relate symptomatic findings to the commonly used terms: heat cramps, heat exhaustion, and heatstroke.
46.13	Describe the contribution of dehydration to the development of heat disorders.
46.14	Describe the differences between classical and exertional heatstroke.
46.15	Define fever and discuss its pathophysiologic mechanism.
46.16	Discuss the role of fluid therapy in the treatment of heat disorders.
46.17	Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient who has dehydration, heat exhaustion, or heatstroke.
46.18	Describe the pathophysiology of hypothermia.
46.19	Identify differences between mild and severe hypothermia.
46.20	Describe differences between chronic and acute hypothermia.
46.21	List signs and symptoms of hypothermia.
46.22	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient who has either mild or severe hypothermia.
46.23	Define frostbite.
46.24	Define superficial frostbite (frostnip).

	46.25	Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with superficial or deep frostbite.
	46.26	Define submersion
	46.27	List signs and symptoms of submersion
	46.28	Describe the lack of significance of fresh versus saltwater immersion, as it relates to submersion
	46.29	Discuss the incidence of "wet" versus "dry" drownings and the differences in their management.
	46.30	Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the submersion patient.
	46.31	Define self contained underwater breathing apparatus (SCUBA).
	46.32	Describe the pathophysiology of diving emergencies.
	46.33	Define decompression illness (DCI).
	46.34	Identify the various conditions that may result from pulmonary over-pressure accidents.
	46.35	List signs and symptoms of diving emergencies.
	46.36	Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving related illnesses.
	46.37	Differentiate among the various treatments and interventions for the management of diving accidents.
	46.38	Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.
	46.39	Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a management plan for the patient who has had a diving accident.
	46.40	Develop a patient management plan based on the field impression of the patient affected by an environmental emergency.
47.0		Implement the proper treatment plan for a patient with a suspected infectious and/or communicable disease. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a management plan for the patient with infectious and communicable diseases. At the completion of this unit, the paramedic student will be able to:
	47.01	Review the specific anatomy and physiology pertinent to infectious and communicable diseases.
	47.02	List and describe the steps of an infectious process.
	47.03	List and describe infectious agents, including bacteria, viruses, fungi, protozoans, and helminths (worms).
	47.04	Describe host defense mechanisms against infection.

47.05	Describe characteristics of the immune system, including the categories of white blood cells, the reticuloendothelial system (RES), and the complement system.
47.06	Describe and discuss the rationale for the various types of PPE.
47.07	Describe the assessment of a patient suspected of, or identified as having, an infectious/communicable disease.
47.08	Discuss the proper disposal of contaminated supplies (sharps, gauze sponges, tourniquets, etc.).
47.09	Discuss disinfection of patient care equipment, and areas in which care of the patient occurred.
47.10	Discuss the following relative to HIV - causative agent, body systems affected and potential secondary complications, modes of transmission, the seroconversion rate after direct significant exposure, susceptibility and resistance, signs and symptoms, specific patient management and personal protective measures, and immunization.
47.11	Discuss Hepatitis A (infectious hepatitis), including the causative agent, body systems affected and potential secondary complications, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
47.12	Discuss Hepatitis B (serum hepatitis), including the causative agent, the organ affected and potential secondary complications, routes of transmission, signs and symptoms, patient management and protective measures, and immunization.
47.13	Discuss Hepatitis C, including the causative agent, the organ affected, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.14	Discuss Hepatitis D (Hepatitis delta virus), including the causative agent, the organ affected, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.15	Discuss Hepatitis E, including the causative agent, the organ affected, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.16	Discuss tuberculosis, including the causative agent, body systems affected and secondary complications, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.17	Discuss meningococcal meningitis (spinal meningitis), including causative organisms, tissues affected, modes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.18	Discuss pneumonia, including causative organisms, body systems affected, routes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
47.19	Discuss tetanus, including the causative organism, the body system affected, modes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
47.20	Discuss chickenpox (varicella), including the causative organism, the body system affected, mode of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization and control measures.
47.21	Discuss mumps, including the causative organism, the body organs and systems affected, mode of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
47.22	Discuss rubella (German measles), including the causative agent, the body tissues and systems affected, modes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
47.23	Discuss measles (rubeola, hard measles), including the causative organism, the body tissues, organs, and systems affected, mode of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and

		immunization.
	47.24	Discuss influenza, including causative organisms, the body system affected, mode of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
	47.25	Discuss mononucleosis, including the causative organisms, the body regions, organs, and systems affected, modes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
	47.26	Discuss the characteristics of, and organisms associated with, febrile and afebrile respiratory disease, to include bronchiolitis, bronchitis, laryngitis, croup, epiglottitis, and the common cold.
	47.27	Discuss gastroenteritis, including the causative organisms, the body system affected, modes of transmission, susceptibility and resistance, signs and symptoms, patient management and protective measures, and immunization.
	47.28	Consistently demonstrate the proper use of body substance isolation.
	47.29	Demonstrate the ability to comply with body substance isolation guidelines.
	47.30	Perform an assessment of a patient with an infectious/communicable disease.
	47.31	Effectively and safely manage a patient with an infectious/communicable disease, including airway and ventilation care, support of circulation, pharmacological intervention, transport considerations, psychological support/communication strategies, and other considerations as mandated by local protocol.
48.0		Implement the proper treatment plan for a patient with a suspected behavioral emergency. – At the end of this unit, the paramedic student will be able to describe and demonstrate safe, empathetic competence in caring for patients with behavioral emergencies. At the completion of this unit, the paramedic student will be able to:
	48.01	Define behavior and distinguish between normal and abnormal behavior.
	48.02	Discuss the prevalence of behavior and psychiatric disorders.
	48.03	Discuss the factors that may alter the behavior or emotional status of an ill or injured individual.
	48.04	Describe the medical legal considerations for management of emotionally disturbed patients.
	48.05	Discuss the pathophysiology of behavioral and psychiatric disorders.
	48.06	Define the following terms: Affect, Anger, Anxiety, Confusion, Depression, Fear, Mental status, Open-ended questions, Posture
	48.07	Describe the verbal techniques useful in managing the emotionally disturbed patient.
	48.08	Describe the circumstances when relatives, bystanders and others should be removed from the scene.
	48.09	Describe the techniques that facilitate the systematic gathering of information from the disturbed patient.
	48.10	Identify techniques for physical assessment in a patient with behavioral problems.
	48.11	Describe methods of restraint that may be necessary in managing the emotionally disturbed patient.

	48.12 List the risk factors for suicide.
	48.13 List the behaviors that may be seen indicating that patient may be at risk for suicide.
	48.14 Differentiate between the various behavioral and psychiatric disorders based on the assessment and history.
	48.15 Develop a patient management plan based on the field impressions.
	48.16 Demonstrate safe techniques for managing and restraining a violent patient.
49.0	Implement the proper treatment plan for a patient with a suspected gynecological emergency. – At the end of this unit, the paramedic student will be able to utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency. At the completion of this unit, the paramedic student will be able to:
	49.01 Review the anatomic structures and physiology of the female reproductive system.
	49.02 Identify the normal events of the menstrual cycle.
	49.03 Describe how to assess a patient with a gynecological complaint.
	49.04 Explain how to recognize a gynecological emergency.
	49.05 Describe the general care for any patient experiencing a gynecological emergency.
	49.06 Describe the pathophysiology, assessment, and management of specific gynecological emergencies.
	49.07 Value the importance of maintaining a patient's modesty and privacy while still being able to obtain necessary information.
	49.08 Defend the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
	49.09 Serve as a role model for other EMS providers when discussing or caring for patients with gynecological emergencies.
	49.10 Demonstrate how to assess a patient with a gynecological complaint.
	49.11 Demonstrate how to provide care for a patient with: Excessive vaginal bleeding, Abdominal pain Sexual assault.
50.0	Implement the proper treatment plan for a patient with a suspected obstetrical emergency. – At the completion of this unit, the paramedic student will be able to apply an understanding of the anatomy and physiology of the female reproductive system to the assessment and management of a patient experiencing normal or abnormal labor. At the completion of this unit, the paramedic student will be able to:
	50.01 Review the anatomic structures and physiology of the reproductive system.
	50.02 Identify the normal events of pregnancy.
	50.03 Describe how to assess an obstetrical patient.

50.04	Identify the stages of labor and the paramedic's role in each stage.
50.05	Differentiate between normal and abnormal delivery.
50.06	Identify and describe complications associated with pregnancy and delivery.
50.07	State indications of an imminent delivery.
50.08	Differentiate the management of a patient with predelivery emergencies from a normal delivery.
50.09	State the steps in the predelivery preparation of the mother.
50.10	State the steps to assist in the delivery of a newborn.
50.11	Describe how to care for the newborn.
50.12	Describe how and when to cut the umbilical cord.
50.13	Discuss the steps in the delivery of the placenta.
50.14	Describe the management of the mother post-delivery.
50.15	Describe the procedures for handling abnormal deliveries.
50.16	Describe the procedures for handling complications of pregnancy.
50.17	Describe the procedures for handling maternal complications of labor.
50.18	Describe special considerations when meconium is present in amniotic fluid or during delivery.
50.19	Describe special considerations of a premature baby.
50.20	Demonstrate how to assess an obstetric patient.
50.21	Demonstrate how to provide care for a patient with: Excessive vaginal bleeding, Abdominal pain Hypertensive crisis
50.22	Demonstrate how to prepare the obstetric patient for delivery.
50.23	Demonstrate how to assist in the normal cephalic delivery of the fetus.
50.24	Demonstrate how to deliver the placenta.
50.25	Demonstrate how to provide post-delivery care of the mother.
50.26	Demonstrate how to assist with abnormal deliveries.

	50.27 Demonstrate how to care for the mother with delivery complications.
51.0	Implement the proper treatment plan for a neonatal emergency. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient. At the completion of this unit, the paramedic student will be able to:
	51.01 Define the term neonate.
	51.02 Identify important antepartum factors that can affect childbirth.
	51.03 Identify important intrapartum factors that can term the newborn high risk.
	51.04 Identify the factors that lead to premature birth and low birth weight newborns.
	51.05 Discuss pulmonary perfusion and asphyxia.
	51.06 Calculate the APGAR score given various newborn situations.
	51.07 Determine when ventilatory assistance is appropriate for a newborn.
	51.08 Prepare appropriate ventilation equipment, adjuncts and technique for a newborn.
	51.09 Determine when chest compressions are appropriate for a newborn.
	51.10 Discuss appropriate chest compression techniques for a newborn.
	51.11 Determine when endotracheal intubation is appropriate for a newborn.
	51.12 Discuss appropriate endotracheal intubation techniques for a newborn.
	51.13 Identify complications related to endotracheal intubation for a newborn.
	51.14 Determine when vascular access is indicated for a newborn.
	51.15 Discuss the routes of medication administration for a newborn.
	51.16 Determine when blow-by oxygen delivery is appropriate for a newborn.
	51.17 Determine when an orogastric tube should be inserted during positive-pressure ventilation.
	51.18 Discuss the signs of hypovolemia in a newborn.
	51.19 Discuss the initial steps in resuscitation of a newborn.
	51.20 Discuss the effects maternal narcotic usage has on the newborn.
	51.21 Discuss appropriate transport guidelines for a newborn.

51.22	Determine appropriate receiving facilities for low and high risk newborns.	
51.23	Describe the epidemiology, including the incidence, morbidity/ mortality, risk factors and prevention strategies for meconium aspiration.	
51.24	Discuss the management/treatment plan for meconium aspiration.	
51.25	Discuss the pathophysiology of apnea in the neonate.	
51.26	Discuss the assessment findings associated with apnea in the neonate.	
51.27	Discuss the management/treatment plan for apnea in the neonate.	
51.28	Describe the epidemiology, including the incidence, morbidity/ mortality and risk factors for bradycardia in the neonate.	
51.29	Discuss the assessment findings associated with bradycardia in the neonate.	
51.30	Discuss the management/ treatment plan for bradycardia in the neonate.	
51.31	Discuss the pathophysiology of premature infants.	
51.32	Discuss the assessment findings associated with premature infants.	
51.33	Discuss the management/treatment plan for premature infants.	
51.34	Discuss the pathophysiology of respiratory distress/ cyanosis in the neonate.	
51.35	Discuss the assessment findings associated with respiratory distress/ cyanosis in the neonate.	
51.36	Discuss the management/treatment plan for respiratory distress/ cyanosis in the neonate.	
51.37	Discuss the pathophysiology of seizures in the neonate.	
51.38	Discuss the assessment findings associated with seizures in the neonate.	
51.39	Discuss the management/treatment plan for seizures in the neonate.	
51.40	Discuss the pathophysiology of fever in the neonate.	
51.41	Discuss the assessment findings associated with fever in the neonate.	
51.42	Discuss the management/treatment plan for fever in the neonate.	
51.43	Discuss the pathophysiology of hypothermia in the neonate.	
51.44	Discuss the assessment findings associated with hypothermia in the neonate.	

51.45	Discuss the management/treatment plan for hypothermia in the neonate.
51.46	Discuss the pathophysiology of hypoglycemia in the neonate.
51.47	Discuss the assessment findings associated with hypoglycemia in the neonate.
51.48	Discuss the management/treatment plan for hypoglycemia in the neonate.
51.49	Discuss the pathophysiology of vomiting in the neonate.
51.50	Discuss the assessment findings associated with vomiting in the neonate.
51.51	Discuss the management/treatment plan for vomiting in the neonate.
51.52	Discuss the pathophysiology of common birth injuries in the neonate.
51.53	Discuss the assessment findings associated with common birth injuries in the neonate.
51.54	Discuss the management/treatment plan for common birth injuries in the neonate.
51.55	Discuss the pathophysiology of cardiac arrest in the neonate.
51.56	Discuss the assessment findings associated with cardiac arrest in the neonate.
51.57	Discuss the management/treatment plan for cardiac arrest in the neonate.
51.58	Discuss the pathophysiology of post arrest management of the neonate.
51.59	Discuss the management/treatment plan to stabilize the post arrest neonate.
51.60	Demonstrate preparation of a newborn resuscitation area.
51.61	Demonstrate appropriate assessment technique for examining a newborn.
51.62	Demonstrate appropriate assisted ventilations for a newborn.
51.63	Demonstrate appropriate endotracheal intubation technique for a newborn.
51.64	Demonstrate appropriate chest compression and ventilation technique for a newborn.
51.65	Demonstrate vascular access cannulation techniques for a newborn except umbilical vein/artery access.
51.66	Demonstrate the initial steps in resuscitation of a newborn.
51.67	Demonstrate blow-by oxygen delivery for a newborn.

52.0	Implement the proper treatment plan for the pediatric patient. – At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient. At the completion of this unit, the paramedic student will be able to:
52.01	Identify key growth and developmental characteristics of infants and children and their implications.
52.02	Identify key anatomical and physiological characteristics of infants and children and their implications.
52.03	Describe techniques for successful assessment of infants and children.
52.04	Describe techniques for successful treatment of infants and children.
52.05	Outline differences in adult and childhood anatomy and physiology.
52.06	Identify "normal" age group related vital signs.
52.07	Determine appropriate airway adjuncts for infants and children.
52.08	Discuss complications of improper utilization of airway adjuncts with infants and children.
52.09	Discuss appropriate ventilation devices for infants and children.
52.10	Discuss complications of improper utilization of ventilation devices with infants and children.
52.11	Identify complications of improper endotracheal intubation procedure in infants and children.
52.12	List the indications and methods for gastric decompression for infants and children.
52.13	Differentiate between upper airway obstruction and lower airway disease.
52.14	Describe the general approach to the treatment of children with respiratory distress, failure, or arrest from upper airway obstruction or lower airway disease.
52.15	Discuss the common causes of hypoperfusion in infants and children.
52.16	Identify the major classifications of pediatric cardiac rhythms.
52.17	Discuss the primary etiologies of cardiopulmonary arrest in infants and children.
52.18	Discuss the appropriate equipment for vascular access in infants and children.
52.19	Identify complications of vascular access for infants and children.
52.20	Describe the primary etiologies of altered level of consciousness in infants and children.
52.21	Identify common lethal mechanisms of injury in infants and children.
52.22	Identify infant and child trauma patients who require spinal immobilization.

52.23	Discuss fluid management and shock treatment for infant and child trauma patient.
52.24	Determine when pain management and sedation are appropriate for infants and children.
52.25	Define child abuse.
52.26	Define child neglect.
52.27	Describe Sudden Unexplained Infant Death Syndrome (SUIDS), current theories, assessment and management, and the immediate needs of the family.
52.28	Discuss the parent/caregiver responses to the death of an infant or child.
52.29	Define children with special health care needs.
52.30	Discuss basic cardiac life support (CPR) guidelines for infants and children.
52.31	Integrate advanced life support skills with basic cardiac life support for infants and children.
52.32	Discuss the indications, dosage, route of administration and special considerations for medication administration in infants and children.
52.33	Discuss the pathophysiology of respiratory distress/failure in infants and children.
52.34	Discuss the assessment findings associated with respiratory distress/ failure in infants and children.
52.35	Discuss the management/treatment plan for respiratory distress/failure in infants and children.
52.36	Discuss the pathophysiology of hypoperfusion in infants and children.
52.37	Discuss the assessment findings associated with hypoperfusion in infants and children.
52.38	Discuss the management/treatment plan for hypoperfusion in infants and children.
52.39	Discuss the pathophysiology of cardiac dysrhythmias in infants and children.
52.40	Discuss the assessment findings associated with cardiac dysrhythmias in infants and children.
52.41	Discuss the management/treatment plan for cardiac dysrhythmias in infants and children.
52.42	Discuss the pathophysiology of neurological emergencies in infants and children.
52.43	Discuss the assessment findings associated with neurological emergencies in infants and children.
52.44	Discuss the management/treatment plan for neurological emergencies in infants and children.
52.45	Discuss the pathophysiology of trauma in infants and children.

52.46	Discuss the assessment findings associated with trauma in infants and children.
52.47	Discuss the management/treatment plan for trauma in infants and children.
52.48	Discuss the pathophysiology of abuse and neglect in infants and children.
52.49	Discuss the assessment findings associated with abuse and neglect in infants and children.
52.50	Discuss the management/treatment plan for abuse and neglect in infants and children, including documentation and reporting.
52.51	Discuss the pathophysiology of children with special health care needs including technology assisted children.
52.52	Discuss the assessment findings associated for children with special health care needs including technology assisted children.
52.53	Discuss the management/treatment plan for children with special health care needs including technology assisted children.
52.54	Discuss the pathophysiology of SUIDS in infants.
52.55	Discuss the assessment findings associated with SUIDS infants.
52.56	Discuss the management/treatment plan for SUIDS in infants.
52.57	Demonstrate the appropriate approach for treating infants and children.
52.58	Demonstrate appropriate intervention techniques with families of acutely ill or injured infants and children.
52.59	Demonstrate an appropriate assessment for different developmental age groups.
52.60	Demonstrate an appropriate technique for measuring pediatric vital signs.
52.61	Demonstrate the use of a length-based resuscitation device for determining equipment sizes, drug doses and other pertinent information for a pediatric patient.
52.62	Demonstrate the appropriate approach for treating infants and children with respiratory distress, failure, and arrest.
52.63	Demonstrate proper technique for administering blow-by oxygen to infants and children.
52.64	Demonstrate the proper utilization of a pediatric non-rebreather oxygen mask.
52.65	Demonstrate proper technique for suctioning of infants and children.
52.66	Demonstrate appropriate use of airway adjuncts with infants and children.
52.67	Demonstrate appropriate use of ventilation devices for infants and children.
52.68	Demonstrate endotracheal intubation procedures in infants and children.

	52.69	Demonstrate appropriate treatment/management of intubation complications for infants and children.
	52.70	Demonstrate appropriate needle cricothyroidotomy in infants and children.
	52.71	Demonstrate proper placement of a gastric tube in infants and children.
	52.72	Demonstrate an appropriate technique for insertion of peripheral intravenous catheters for infants and children.
	52.73	Demonstrate an appropriate technique for administration of intramuscular, inhalation, subcutaneous, rectal, endotracheal and oral medication for infants and children.
	52.74	Demonstrate an appropriate technique for insertion of an intraosseous line for infants and children.
	52.75	Demonstrate age appropriate basic airway clearing maneuvers for infants and children with a completely obstructed airway.
	52.76	Demonstrate proper technique for direct larnyngoscopy and foreign body retrieval in infants and children with a completely obstructed airway.
	52.77	Demonstrate appropriate airway and breathing control maneuvers for infant and child trauma patients.
	52.78	Demonstrate appropriate immobilization techniques for infant and child trauma patients.
	52.79	Demonstrate treatment of infants and children with head injuries.
	52.80	Demonstrate appropriate treatment of infants and children with chest injuries.
	52.81	Demonstrate appropriate treatment of infants and children with abdominal injuries.
	52.82	Demonstrate appropriate treatment of infants and children with extremity injuries.
	52.83	Demonstrate appropriate treatment of infants and children with burns.
	52.84	Demonstrate appropriate parent/caregiver interviewing techniques for infant and child death situations.
	52.85	Demonstrate proper infant CPR.
	52.86	Demonstrate proper child CPR.
	52.87	Demonstrate proper techniques for performing infant and child defibrillation and synchronized cardioversion.
53.0		Implement the proper treatment plan for the geriatric patient. – At the completion of this unit, the paramedic student will be able to integrate the pathophysiological principles and the assessment findings to formulate and implement a treatment plan for the geriatric patient. At the completion of this unit, the paramedic student will be able to:
	53.01	Discuss common emotional and psychological reactions to aging to include causes and manifestations.
	53.02	Discuss the problems with mobility in the elderly and develop strategies to prevent falls.

53.03	Discuss factors that may complicate the assessment of the elderly patient.	
53.04	Describe principles that should be employed when assessing and communicating with the elderly.	
53.05	Discuss common complaints of elderly patients.	
53.06	Discuss the impact of polypharmacy and medication non-compliance on patient assessment and management.	
53.07	Discuss medication issues of the elderly including polypharmacy, dosing errors and increased drug sensitivity.	
53.08	Discuss the assessment of the elderly patient with pulmonary complaints, including pneumonia, chronic obstructive pulmonary diseases, and pulmonary embolism.	
53.09	Identify the need for intervention and transport of the elderly patient with pulmonary complaints.	
53.10	Develop a treatment and management plan of the elderly patient with pulmonary complaints, including pneumonia, chronic obstructive pulmonary diseases, and pulmonary embolism.	
53.11	Discuss the assessment of the elderly patient with complaints related to the cardiovascular system, including myocardial infarction, heart failure, dysrhythmias, aneurism, and hypertension.	
53.12	Develop a treatment and management plan of the elderly patient with cardiovascular complaints, including myocardial infarction, heart failure, dysrhythmias, aneurism and hypertension.	
53.13	Discuss the assessment of the elderly patient with complaints related to the nervous system, including cerebral vascular disease, delirium, dementia, Alzheimer's disease and Parkinson's disease.	
53.14	Develop a treatment and management plan of the elderly patient with complaints related to the nervous system, including cerebral vascular disease, delirium, dementia, Alzheimer's disease and Parkinson's disease.	
53.15	Describe the epidemiology for endocrine diseases in the elderly, including incidence, morbidity/mortality, risk factors, and prevention strategies for patients with diabetes and thyroid diseases.	
53.16	Discuss the assessment of the elderly patient with complaints related to the endocrine system, including diabetes and thyroid diseases.	
53.17	Develop a treatment and management plan of the elderly patient with endocrine problems, including diabetes and thyroid diseases.	
53.18	Develop and execute a treatment and management plan of the elderly patient with gastrointestinal problems.	
53.19	Develop and execute a treatment and management plan of the elderly patient with toxicological problems.	
53.20	Discuss the management/considerations when treating an elderly patient with drug and alcohol abuse.	
53.21	Develop and execute a treatment and management plan of the elderly patient with environmental considerations.	
53.22	Develop a treatment and management plan of the elderly psychiatric patient, including depression and suicide.	
53.23	Discuss the assessment findings common in elderly patients with traumatic injuries, including orthopedic injuries, burns and head injuries.	
53.24	Discuss the management/considerations when treating an elderly patient with traumatic injuries, including orthopedic injuries, burns and head injuries.	

	53.25 Demonstrate the ability to assess a geriatric patient.
	53.26 Demonstrate the ability to adjust their assessment to a geriatric patient.
54.0	Implement the proper treatment plan for a patient who has sustained abuse or assault. – At the completion of this unit, the paramedic student will be able to integrate the assessment findings to formulate a field impression and implement a treatment plan for the patient who has sustained abuse or assault. At the completion of this unit, the paramedic student will be able to:
	54.01 Discuss the incidence of abuse and assault.
	54.02 Describe the categories of abuse.
	54.03 Discuss examples of spouse abuse.
	54.04 Discuss examples of elder abuse.
	54.05 Discuss examples of child abuse.
	54.06 Discuss examples of sexual assault.
	54.07 Describe the characteristics associated with the profile of the typical abuser of a spouse.
	54.08 Describe the characteristics associated with the profile of the typical abuser of the elder.
	54.09 Describe the characteristics associated with the profile of the typical abuser of children.
	54.10 Describe the characteristics associated with the profile of the typical assailant of sexual assault.
	54.11 Identify the profile of the "at-risk" spouse.
	54.12 Identify the profile of the "at-risk" elder.
	54.13 Identify the profile of the "at-risk" child.
	54.14 Discuss the assessment and management of the abused patient.
	54.15 Discuss the legal aspects associated with abuse situations.
	54.16 Discuss the documentation associated with abused and assaulted patient.
	54.17 Demonstrate the ability to assess a spouse, elder or child abused patient.
	54.18 Demonstrate the ability to assess a sexually assaulted patient.
55.0	Implement the proper treatment plan for a variety of diverse patients with a suspected emergency. – At the completion of this unit the paramedic student will be able to integrate pathophysiological and psychosocial principles to adapt the assessment and treatment plan for diverse patients and those who face physical, mental, social and financial challenges. At the completion of this unit, the paramedic student

		will be able to:
	55.01	Recognize the patient with a hearing impairment.
	55.02	Anticipate accommodations that may be needed in order to properly manage the patient with a hearing impairment.
	55.03	Recognize the patient with a visual impairment.
	55.04	Describe the various etiologies and types of speech impairments.
	55.05	Recognize the patient with a speech impairment.
	55.06	Describe paraplegia/quadriplegia.
	55.07	Describe the various etiologies of mental illness.
	55.08	Recognize the presenting signs of the various mental illnesses.
	55.09	Recognize the patient with a developmental disability.
	55.10	Recognize the patient with Down's syndrome.
	55.11	Describe the various etiologies of emotional impairment.
	55.12	Recognize the patient with an emotional impairment.
	55.13	Describe the following diseases/illnesses: Arthritis, Cancer, Cerebral palsy, Cystic fibrosis Multiple sclerosis, Muscular dystrophy, Myasthenia gravis, Poliomyelitis, Spina bifida, patients with a previous head injury
	55.14	Identify the possible presenting sign(s) for the following diseases/illnesses: Arthritis, Cancer, Cerebral palsy, Cystic fibrosis,Multiple sclerosis, Muscular dystrophy, Myasthenia gravis, Poliomyelitis, Spina bifida, and patients with a previous head injury.
	55.15	Identify a patient that is terminally ill.
	55.16	Identify a patient with a communicable disease.
	55.17	Recognize the presenting signs of a patient with a communicable disease.
	55.18	Recognize sign(s) of financial impairments.
56.0		Implement the proper treatment plan for the chronic care patient. – At the completion of this unit, the paramedic student will be able to integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the acute deterioration of a chronic care patient. At the completion of this unit, the paramedic student will be able to:
	56.01	Identify the importance of home health care medicine as related to the ALS level of care.
	56.02	Differentiate between the role of EMS provider and the role of the home care provider.

	56.03	Discuss the aspects of home care that result in enhanced quality of care for a given patient.
	56.04	Discuss the aspects of home care that have a potential to become a detriment to the quality of care for a given patient.
	56.05	List complications commonly seen in the home care patients, which result in their hospitalization.
	56.06	Define hospice care, comfort care and DNR/DNAR as they relate to local practice, law and policy.
	56.07	List the stages of the grief process and relate them to an individual in hospice care.
	56.08	Given a series of home care scenarios, determine which patients should receive follow-up home care and which should be transported to an emergency care facility.
	56.09	Describe airway maintenance devices typically found in the home care environment.
	56.10	Describe devices that provide or enhance alveolar ventilation in the home care setting.
	56.11	Describe and access indwelling catheters, implanted central IV ports and central line monitoring.
	56.12	Describe complications of assessing each of the airway, vascular access, and GI/GU devices described above.
	56.13	Describe the indications and contraindications for urinary catheter insertion in an out-of-hospital setting.
	56.14	Identify failure of GI/GU devices found in the home care setting.
	56.15	Identify failure of ventilatory devices found in the home care setting.
	56.16	Identify failure of vascular access devices found in the home care setting.
	56.17	Identify failure of drains.
	56.18	Discuss the rights of the terminally ill.
	56.19	Observe for an infected or otherwise complicated venous access point.
	56.20	Demonstrate proper tracheotomy care.
	56.21	Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
57.0		Implement the proper treatment plan for patients with common complaints. – At the completion of this unit, the paramedic student will be able to integrate the principles of assessment based management to perform an appropriate assessment and implement the management plan for patients with common complaints. At the completion of this unit, the paramedic student will be able to:
	57.01	Explain how the paramedic's attitude affects assessment and decision making.
	57.02	Explain how uncooperative patients affect assessment and decision making.

	57.03	Explain the roles of the team leader and the patient care person.
	57.04	List and explain the rationale for carrying the essential patient care items.
	57.05	Explain the general approach to the emergency patient.
	57.06	Explain the general approach, patient assessment, differentials, and management priorities for patients, including but not limited to the following problems: chest pain, medical and traumatic cardiac arrest, acute abdominal pain, GI bleed, altered mental status, dyspnea, syncope, seizures, environmental or thermal problems, hazardous material or toxic exposure, trauma or multi-trauma patients, allergic reactions, behavioral problems, obstetric or gynecological problems, and pediatric problems.
	57.07	Describe how to effectively communicate patient information face to face, over the telephone, by radio, and in writing.
	57.08	While serving as team leader, choreograph the EMS response team, perform a patient assessment, provide local/regionally appropriate treatment, present cases verbally and in writing given a moulaged and programmed simulated patient.
	57.09	While serving as team leader, assess a programmed patient or mannequin, consider differentials, make decisions relative to interventions and transportation, provide the interventions, patient packaging and transportation, work as a team and practice various roles, including but not limited to the following common emergencies: chest pain. Cardiac arrest, acute abdominal pain, GI bleed, altered mental status, dyspnea, syncope, seizure, thermal/environmental problems, hazardous materials/toxicology, trauma, allergic reactions/bites/envenomation, behavioral, obstetrical, gynecological and pediatric.
58.0		Demonstrate the proper procedures to ensure safe and effective ground and air transport. – At the completion of this unit, the paramedic will understand standards and guidelines that help ensure safe and effective ground and air medical transport. At the completion of this unit, the paramedic student will be able to:
	58.01	Identify current local and state standards which influence ambulance design, equipment requirements and staffing of ambulances.
	58.02	Discuss the importance of completing an ambulance equipment/ supply checklist.
	58.03	Discuss the factors to be considered when determining ambulance stationing within a community.
	58.04	Describe the advantages and disadvantages of air medical transport.
	58.05	Identify the conditions/situations in which air medical transport should be considered.
	58.06	Assess personal practices relative to ambulance operations which may affect the safety of the crew, the patient and bystanders.
	58.07	Serve as a role model for others relative to the operation of ambulances.
	58.08	Value the need to serve as the patient advocate to ensure appropriate patient transportation via ground or air.
	58.09	Demonstrate how to place a patient in, and remove a patient from, an ambulance.
59.0		Integrate the principles of general incident management and multiple casualty incident management. – At the completion of this unit, the paramedic student will be able to integrate the principles of general incident management and multiple casualty incident (MCI) management techniques in order to function effectively at major incidents. At the completion of this unit, the paramedic student will be able to:

59.01	Explain the need for the incident management system (IMS)/incident command system (ICS) in managing emergency medical services incidents.
59.02	Define the term multiple casualty incident (MCI).
59.03	Define the term disaster management.
59.04	Discuss the importance of NIMS (National Incidence Management System).
59.05	Describe essential elements of scene size-up when arriving at a potential MCI.
59.06	Describe the role of the paramedics and EMS systems in planning for MCIs and disasters.
59.07	Describe the functional components of the incident management system in terms of the following: command, finance, logistics, operations and planning.
59.08	Differentiate between singular and unified command and when each is most applicable.
59.09	Describe the role of command.
59.10	Describe the need for transfer of command and procedures for transferring it.
59.11	List and describe the functions of the following groups and leaders in ICS as it pertains to EMS incidents: safety, logistics, rehabilitation, staging, treatment, triage, transportation, extrication/rescue, morgue, and communications.
59.12	Describe the role of the physician at multiple casualty incidents.
59.13	Define triage and describe the principles of triage.
59.14	Describe the START (simple triage and rapid treatment) method of initial triage.
59.15	Define primary and secondary triage.
59.16	Describe techniques used to allocate patients to hospitals and track them.
59.17	List and describe the essential equipment to provide logistical support to MCI operations, including but not limited to: Airway, respiratory and hemorrhage control, Burn management, and Patient packaging/immobilization.
59.18	List the physical and psychological signs of critical incident stress.
59.19	Describe the role of critical incident stress management sessions in MCIs.
59.20	Explain the organizational benefits for having standard operating procedures (SOPs) for using the incident management system or incident command system.
59.21	Demonstrate the use of local/regional triage tagging system used for primary and secondary triage.
59.22	Given a classroom simulation of a MCI with 5-10 patients, fulfill the role of triage group leader.
59.23	Given a classroom simulation of a MCI with 5-10 patients, fulfill the role of treatment group leader.

	59.24	Given a classroom simulation of a MCI with 5-10 patients, fulfill the role of transportation group leader.
60.0		Integrate the principles of rescue awareness management. – At the completion of this unit, the paramedic student will be able to integrate the principles of rescue awareness and operations to safely rescue a patient from water, hazardous atmospheres, trenches, highways, and hazardous terrain. At the completion of this unit, the paramedic student will be able to:
	60.01	Explain the medical and mechanical aspects of rescue situations.
	60.02	Explain the role of the paramedic in delivering care at the site of the injury, continuing through the rescue process and to definitive care.
	60.03	Describe the phases of a rescue operation.
	60.04	Explain the differences in risk between moving water and flat water rescue.
	60.05	Explain the effects of immersion hypothermia on the ability to survive sudden immersion and self rescue.
	60.06	Explain the phenomenon of the cold protective response in cold water drowning situations.
	60.07	Explain the rescue techniques associated with reach-throw-row-go.
	60.08	Given a list of rescue scenarios, identify the victim survivability profile and which are rescue versus body recovery situations.
	60.09	Explain the self-rescue position if unexpectedly immersed in moving water.
	60.10	Identify components necessary to ensure site safety prior to confined space rescue attempts.
	60.11	Explain the hazard of cave-in during trench rescue operations.
	60.12	Describe the effects of traffic flow on the highway rescue incident including limited access superhighways and regular access highways.
	60.13	List and describe the hazards associated with the following auto/ truck components: energy absorbing bumpers, air bag/supplemental restraint systems, catalytic converters and conventional fuel systems, stored energy, and alternate fuel systems.
	60.14	Describe methods for emergency stabilization using rope, cribbing, jacks, spare tire, and come-a-longs for vehicles found on their:
	60.15	Describe the electrical hazards commonly found at highway incidents (above and below ground).
	60.16	Explain the difference between tempered and safety glass, identify its locations on a vehicle and how to break it safely.
	60.17	Explain typical door anatomy and methods to access through stuck doors.
	60.18	Explain SRS or "air bag" systems and methods to neutralize them.
	60.19	Describe the procedure for stokes litter packaging for low angle evacuations.
	60.20	Explain techniques to be used in non-technical litter carries over rough terrain.

	60.21	Explain non-technical high angle rescue procedures using aerial apparatus.
	60.22	Explain assessment procedures and modifications necessary when caring for entrapped patients.
	60.23	List the equipment necessary for an "off road" medical pack.
	60.24	Explain specific methods of improvisation for assessment, spinal immobilization and extremity splinting.
	60.25	Explain the indications, contraindications and methods of pain control for entrapped patients.
	60.26	Explain the need for and techniques of thermal control for entrapped patients.
	60.27	Develop proficiency in patient packaging and evacuation techniques that pertain to hazardous or rescue environments.
	60.28	Demonstrate methods of "stokes" packaging for patients being vertically lifted (high angle), horizontally lifted (low angle), and carried over rough terrain.
	60.29	Demonstrate methods of packaging for patients being vertically lifted without stokes litter stretcher packaging.
	60.30	Demonstrate litter securing techniques for patients being evacuated by aerial apparatus.
	60.31	Demonstrate in-water spinal immobilization techniques.
	60.32	Demonstrate donning and properly adjusting a PFD.
61.0	Integrate the principles of human hazard awareness. – At the completion of this unit, the paramedic student will have an awareness of the human hazard of crime and violence and the safe operation at crime scenes and other emergencies. At the completion of this unit, the paramedic student will be able to:	
	61.01	Explain specific techniques for risk reduction when approaching the following types of routine EMS scenes: highway encounters, violent street incidents, and residences and "dark houses".
	61.02	Describe warning signs of potentially violent situations.
	61.03	Describe police evidence considerations and techniques to assist in evidence preservation.
	61.04	Demonstrate field contact and cover procedures during assessment and care, evasive tactics, and concealment techniques.
62.0	Integrate the principles of general incident management of hazardous materials emergencies. – At the completion of this unit, the paramedic student will be able to evaluate hazardous materials emergencies, call for appropriate resources, and work in the cold zone. At the completion of this unit, the paramedic student will be able to:	
	62.01	Identify resources for substance identification, decontamination and treatment information, including but not limited to the following: poison control center, medical control, material safety data sheets (MSDS), reference textbooks, computer databases (CAMEO), CHEMTREC, technical specialists and agency for toxic substances and disease registry.
	62.02	Explain primary and secondary contamination risk.
	62.03	List and describe the following routes of exposure: topical, respiratory, gastrointestinal, and parenteral.

62.04	Explain how the substance and route of contamination alters triage and decontamination methods.
62.05	Explain the limitations of field decontamination procedures.
62.06	Explain the use and limitations of personal protective equipment (PPE) in hazardous material situations.
62.07	List and explain the common signs, symptoms and treatment for the following substances: corrosives (acids/alkalis), pesticides (carbamates/organophosphates), chemical asphyxiants (cyanide/carbon monoxide), and hydrocarbon solvents (xylene, methlyene chloride).
62.08	Identify local facilities and resources capable of treating patients exposed to hazardous materials.
62.09	Define the following terms and explain their importance to the risk assessment process: boiling point, flammable/explosive limits, flash point, ignition temperature, specific gravity, vapor density, vapor pressure, water solubility, and alpha, beta, and gamma radiation.
62.10	Define the following toxicologic terms and their use in the risk assessment process: threshold limit value (TLV), lethal concentration and doses (LD), parts per million/billion (ppm/ppb), immediately dangerous to life and health (IDLH), permissible exposure limit (PEL), permissible exposure limit (PEL), short term exposure limit (TLV-STEL), and ceiling level (TLV-C).
62.11	Determine the appropriate level of PPE to include: types, application, use and limitations, and use of chemical compatibility chart.
62.12	Explain decontamination procedures when functioning in the following modes: critical patient rapid two step decontamination process and non-critical patient eight step decontamination process.
62.13	Explain specific decontamination procedures.
62.14	Explain the documentation necessary for Haz-Mat medical monitoring and rehabilitation operations, including the substance, the toxicity and danger of secondary contamination, appropriate PPE and suit breakthrough time, appropriate level of decontamination, appropriate antidote and medical treatment and transportation method.
62.15	Given a simulated hazardous substance, use reference material to determine the appropriate actions.
62.16	Demonstrate the donning and doffing of appropriate PPE.
62.17	Set up and demonstrate an emergency two-step decontamination process.

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.

Florida Statute 401.2701 requires that the instructor-student ratio should not exceed 1:6.

Field internship shall include a competency-based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include supervised experience in the field setting with a certified ALS transport EMS agency or ALS fire department. Refer to 64J-1/20 for additional requirements of the field internship inside of the paramedic program.

Special Notes

This program meets the Department of Health trauma score card methodologies and SUIDS training education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that these requirements have been met. Programs may also teach domestic violence and prevention of medical errors education and may choose to provide a certificate to the student verifying that this education has been completed.

A Paramedic program must be taught by faculty meeting the qualifications as set forth in 64J-1.020 F. A. C.

Field internship shall include a competency-based program to assure appropriate pre-hospital assessment and management of medical and trauma patients, as well as associated manual skills. The field internship activity shall include supervised experience in the field setting with a certified ALS transport EMS agency or ALS fire department. Refer to 64J-1.20 for additional requirements of the field internship inside of the paramedic program.

Pursuant F.S.401.2701 to Paramedic programs must be available only to Florida-certified emergency medical technicians or an emergency medical technician applicant who will obtain Florida certification prior to completion of phase one of the paramedic program and EMT certification must be maintained through the program.

It is strongly recommended this program be accredited by CAAHEP (Commission on Accreditation of Allied Health Education Programs). Beginning January 1, 2013, National Registry for Emergency Medical Technicians (NREMT) will require students applying for Paramedic National certification to be from a CAAHEP/CoAEMSP accredited program.

The Student Performance Standards for Paramedic were adapted and condensed from the most current US Department of Transportation, National EMS Educational Standards for the Paramedic. Administrators and instructors should refer to these materials for additional detail.

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 successful completion of the core, students will be 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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Nuclear Medicine Technology Specialist**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090503
Program Type	College Credit Certificate (CCC)
Program Length	48 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2033 Nuclear Medicine Technologists
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Nuclear Medicine Technology AS degree program (1351090502).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as radiologic technologists, nuclear medicine or nuclear medicine technologists SOC Code 29-2033 (Nuclear Medicine Technologists) or provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to the utilization of radioactive materials for diagnostic and therapeutic procedures, patient care, administrative functions, health and safety including CPR.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Practice radiation safety.
13.0   Practice basic radiopharmacy.
14.0   Calculate doses and administer radiopharmaceuticals and interventional pharmaceuticals.
15.0   Perform "in vitro"/"in vivo" nonimaging procedures.
16.0   Perform imaging procedures.
17.0   Practice quality control.

Florida Department of Education
Student Performance Standards

Program Title: **Nuclear Medicine Technology Specialist**
CIP Number: **0351090503**
Program Length: **48 credit hours**
SOC Code(s): **29-2033**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Nuclear Medicine Technology AS degree program (1351090502). At the completion of this program, the student will be able to:
Nuclear Medicine Technology: (12-17)
12.0   Practice radiation safety–The student will be able to:
12.01   Assure compliance with local, state and federal regulations.
12.02   Follow appropriate protection procedures for patients, coworkers and public.
12.03   Follow approved procedures for identifying and labeling radioactive material and radiopharmaceutical doses.
12.04   Perform area surveys and wipe tests.
12.05   Appropriately dispose of radioactive waste.
12.06   Practice personnel monitoring of radiation exposure.
12.07   Perform decontamination procedures.
12.08   Implement appropriate The Joint Commission patient safety goals and any other applicable accrediting/regulatory agency guidelines.

13.0	**Practice basic radiopharmacy–The student will be able to:**
	13.01 Maintain radiopharmaceutical laboratory records and materials.
	13.02 Observe generatoreluate in practice lab, clinical sites or radiopharmacy.
	13.03 Prepare radiopharmaceuticals and perform quality control tests in practice lab only or observation in clinical sites
	13.04 Demonstrate understanding of ordering radiopharmaceuticals in appropriate dosage and effective time frame.
14.0	**Calculate doses and administer radiopharmaceutical and interventional pharmaceuticals–The student will be able to:**
	14.01 Perform dose calibrator quality control tests.
	14.02 Calculate the activity and volume of dose.
	14.03 Assay radiopharmaceuticals.
	14.04 Properly administer dose using appropriate route.
	14.05 Properly calculate, prepare, and administer interventional pharmaceuticals.
	14.06 Perform venipuncture accurately and efficiently.
	14.07 Participate in the tagging of blood cells.
	14.08 Maintain records of administrations/preparations.
	14.09 Strictly observe precautions and contraindications of medications and radiopharmaceuticals.
	14.10 Evaluate patients' history and needs and care for them accordingly.
	14.11 Appropriately support treatment for adverse effects.
	14.12 Document accordingly following the facility protocol.
15.0	**Perform "in vitro"/"in vivo" nonimaging procedures–The student will be able to:**
	15.01 Operate conventional laboratory equipment.
	15.02 Simulate the preparation of doses and standards in the practice lab.
	15.03 Accurately and efficiently simulate the collection of specimensin the practice lab.
	15.04 Operate radiation detection equipment.

	15.05	Simulate the performance of radioassays and calcuations.in the practice lab.
16.0	Perform imaging procedures–The student will be able to:	
	16.01	Verify order, history and protocol for patient prior to proceeding.
	16.02	Verify identity of patient and educate them on procedure.
	16.03	Prepare patient as needed for procedure.
	16.04	Select proper acquisition parameters to obtain planar, SPECT/CT, and PET/CT images.
	16.05	Appropriately perform planar, SPECT/CT, and PET/CT data processing using reconstruction techniques.
	16.06	Properly prepare images to be sent to physician according to facility protocol.
	16.07	Perform PACS procedures according to facility protocol.
	16.08	Maintain appropriate records.
17.0	Practice quality control–The student will be able to:	
	17.01	Perform scheduled quality control testing of laboratory and imaging equipment.
	17.02	Operate scintillation counters.
	17.03	Operate and perform daily quality control on gas-filled detectors.
	17.04	Maintain a quality assurance program according to agencies such as Florida Bureau of Radiation Control, JRCNMT, NRC, ACR and OSHA.

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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.

The program must be accredited by the:

>	Joint Review Committee on Educational Programs in
>	Nuclear Medicine Technology (JRCNMT)
>	2000 W. Danforth Rd., Ste 130 #203
>	Edmond OK 73003
>	Tel: (405) 285-0546
>	Fax: (405) 285-0579
>	http://www.jrcnmt.org/

>	Or
>	Southern Association of Colleges and Schools (SACS)
>	2520 Northwinds Parkway
>	Suite 600
>	Alpharetta, GA 30009
>	888-41ED NOW (888-413-3669)
>	http://www.sacs.org/

The program must also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible to be licensed in Florida as a Certified Radiologic Technologist - Nuclear Medicine (i.e., a Nuclear Medicine Technologist). As specified in Chapter 468, Part IV and 64E-FAC. All accredited NMT programs which are recognized and accepted by either the American Registry of Radiologic Technologists (ARRT), or the Nuclear Medicine Technology Certification Board (NMTCB), are approved by the Department of Health

The nuclear medicine technologist performs patient care with understanding of patient's special needs, fears and concerns and recognizes changes in patient condition. Limiting the exposure of the patient and other health care workers to minimal levels of radiation is of paramount importance.

A fundamental knowledge and understanding of the physical and biological sciences, including radiation biology and protection, as well as radiopharmaceuticals "in vivo" and "Invitro" is essential: nuclear physics, biochemistry, immunology, physiology and an introduction to computer applications/operations with data manipulation must be included.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e., radiologic technology, etc.). Upon the successful completion of the program the student will receive a Nuclear Medicine Specialist Certificate.

Program completers will be eligible to apply to the Department of Health for the required state Nuclear Medicine Technologist license. For further information contact:

>   Department of Health
>   MQA Radiologic Technology Program
>   4052 Bald Cypress Way, Bin #C85
>   Tallahassee, FL 32399
>   Phone: (850) 245-4910
>   Fax: (850) 921-6365
>   Internet: www.doh.state.fl.us/mqa/rad-tech

Program completers will be eligible to make an application to take one or both of the National Registry examination. For further information contact:

>   American Registry of Radiologic Technologists (ARRT)
>   1255 Northland Drive
>   St. Paul, MN 55120-1155
>   (612) 687-0048
>   www.arrt.org

>   Or

>   Nuclear Medicine Technology Certification Board (NMTCB)
>   3558 Habersham at Northlake
>   Building I
>   Tucker, GA 30084
>   Toll Free: (800) 659-3953
>   www.nmtcb.org

Students are encouraged to become members of their appropriate professional organizations such as the Society of Nuclear Medicine – Technologist Section (SNM-TS), Florida Nuclear Medicine Technologists, Inc. (FNMT), the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Radiation Therapy Specialist**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090703
Program Type	College Credit Certificate (CCC)
Program Length	43 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-1124 Radiation Therapists
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Radiation Therapy AS degree program (1351090701).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The purpose of this program is to prepare students for employment as radiation therapy technologist SOC Code 29-1124 (Radiation Therapists), or to provide supplemental training for persons previously or presently employed in these occupations.

The content includes but is not limited to administer the prescribed radiation therapy treatments of the highest caliber, thereby providing the patient treatments of the highest quality and accuracy; to become members of the health care team that contributes to the physical and psychological comfort of the patient, to provide radiation protection to the patient, self and health care team; to work with the health care team to improve radiotherapeutic health care in the hospital and community; and to understand the importance of maintaining membership in the professional organizations and keeping abreast of the changes in the field of radiation therapy.

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

<u>**Standards**</u>

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

01.0   Demonstrate the proficiency in the skills and knowledge required of clinical practice.
02.0   Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels.
03.0   Demonstrate proficiency in imaging and processing in radiation oncology.
04.0   Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels.
05.0   Demonstrate a functional knowledge of medical terminology required in radiation therapy.
06.0   Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy.
07.0   Demonstrate knowledge of the foundational principles and practices of radiation therapy.
08.0   Demonstrate knowledge of essential concepts related to pathophysiology.
09.0   Demonstrate knowledge of the fundamental principles of radiation therapy.
10.0   Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease.
11.0   Demonstrate the skills, procedures and knowledge required for effective quality management.
12.0   Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist.
13.0   Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting.
14.0   Demonstrate the principles of radiation protection and safety for the radiation therapist.
15.0   Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery.
16.0   Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics.
17.0   Demonstrate proficiency in research methods and information literacy.
18.0   Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy.
19.0   Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment.

Florida Department of Education
Student Performance Standards

Program Title: **Radiation Therapy Specialist**
CIP Number: **0351090703**
Program Length: **43 credit hours**
SOC Code(s):   **29-1124**

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This certificate program is part of the Radiation Therapy AS degree program (1351090701). At the completion of this program, the student will be able to:
01.0 Demonstrate the proficiency in the skills and knowledge required of clinical practice.- The student will be able to:
01.01 Operate within the radiation therapy scope of practice.
01.02 Demonstrate values and attitudes congruent with the profession's standards and ethics.
01.03 Formulate priorities in daily clinical practice.
01.04 Apply concepts of teamwork.
01.05 Adapt to dynamic clinical situations.
01.06 Establish patient-centered, clinically effective service delivery strategies.
01.07 Deliver a prescribed course of treatment adhering to acceptable departmental, institutional, governmental and professional standards.
01.08 Assess the patient's status and condition in order to deliver a prescribed course of radiation therapy.
01.09 Use critical thinking for accurate treatment delivery.
01.10 Demonstrate the principles of radiation protection.
01.11 Monitor tumor lethal dose and normal tissue tolerance dose.
01.12 Evaluate the clinical significance of the treatment parameters as prescribed to suspend the treatment process.
01.13 Apply the principles of total quality management.

	01.14	Detect equipment malfunctions and take appropriate action.
	01.15	Construct and prepare immobilization, beam alignment and beam modification devices.
	01.16	Design, evaluate and implement treatment plans.
	01.17	Validate manual and computer dosimetric calculations.
	01.18	Perform simulation, localization and therapeutic procedures as they pertain to radiation therapy in accordance with national patient safety standards.
	01.19	Demonstrate appropriate and effective communication.
	01.20	Demonstrate safe, ethical and legal practices.
	01.21	Evaluate the clinical significance of the patient's uniqueness to formulate appropriate actions.
	01.22	Apply appropriate safety, transfer and immobilization principles.
	01.23	Apply concepts of teaching and learning theories in design, implementation and evaluation in the education of patient, family, colleagues and the community.
	01.24	Describe programs designed to promote and maintain health and wellness to meet patient needs.
	01.25	Demonstrate appropriate interaction with patients and patients' family and friends.
	01.26	Assess patient side effects and complications to create an interdisciplinary management strategy that fosters prevention, healing and comfort.
	01.27	Document all aspects of patient care and management in the appropriate record.
	01.28	Document and communicate errors and discrepancies in accordance with institutional and national quality management procedures.
	01.29	Initiate life support procedures as necessary.
	01.30	Document knowledge of the institution's procedures in response to emergencies, disasters and accidents.
	01.31	Apply strategies that ensure professional development at a level of clinical practice consistent with acceptable standards.
	01.32	Demonstrate quality assurance procedures for all treatment delivery equipment and accessories.
	01.33	Evaluate outcomes to continuously improve radiation therapy services.
	01.34	Incorporate Health Insurance Portability and Accountability Act (HIPAA) requirements into clinical practice.
	01.35	Interpret treatment plan prior to treatment.
02.0	Convey an understanding of the ethics that impact radiation therapy at both the state and federal levels. -The student will be able to:	

	02.01	Identify theories and principles that guide ethical decision making for practice situations.
	02.02	Define practice situations that carry high potential for dilemmas that require ethical scrutiny.
	02.03	Discuss basic ethical duties of health care providers.
	02.04	Demonstrate an awareness of and sensitivity to various cultural and ethnic differences among various client groups.
	02.05	Discuss the concept of patient advocacy in support of patients' rights.
	02.06	Discuss ethical theories and models.
	02.07	Discuss the radiation therapy scope of practice, code of ethics and practice standards.
	02.08	Examine concepts of personal honesty, integrity, accountability and professional compassion as ethical imperatives in professional practice.
	02.09	Differentiate between distributive, compensatory and retributive justice.
	02.10	Differentiate between provider and patient relationships.
	02.11	Discuss the duty of the radiation therapist to take responsibility for actions and decisions.
	02.12	Discuss the elements of an informed consent.
	02.13	Discuss standards of disclosure.
	02.14	Analyze issues related to the use and flow of patient information to determine confidentiality.
	02.15	Explain ethical issues related to different age groups.
	02.16	Identify current ethical issues in health care.
	02.17	Demonstrate application of a system of examination, clarification, determination, the doctrine of informed consent and other issues related to patient rights.
	02.18	Explain ethical issues related to the profession.
	02.19	Discuss the relationship between ethics and health care policy.
	02.20	Examine ethical issues arising daily in a radiation therapy department.
03.0	Demonstrate proficiency in imaging and processing in radiation oncology. -The student will be able to:	
	03.01	Define terminology associated with digital imaging systems.
	03.02	Describe the various types of digital receptors.

03.03	Discuss the fundamentals of digital imaging.
03.04	Discuss image acquisition.
03.05	Describe the evaluative criteria for digital imaging detectors.
03.06	Describe the histogram and the process or histogram analysis as it relates to automatic rescaling and determining an exposure indicator.
03.07	Identify the exposure indices for digital imaging receptors.
03.08	Discuss the response of digital imaging systems to background and scatter radiation.
03.09	Use appropriate means of scatter control.
03.10	Explain methods to avoid histogram analysis errors.
03.11	Describe image processing employed for digital images.
03.12	Associate the impact of image processing parameters to the image appearance.
03.13	Associate the effects of inappropriate processing on image clarity or conspicuity.
03.14	Describe and apply the fundamental physical principles of exposure for digital detectors.
03.15	Describe the selection of technical factors to ensure appropriate receptor exposure levels for digital detectors.
03.16	Describe the conditions that cause quantum mottle in a digital image.
03.17	Explain methods to avoid poor quality images.
03.18	Examine the potential impact of digital imaging systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.
03.19	Describe picture archiving and communications system (PACS) and its function.
03.20	Identify components of a PACS system.
03.21	Describe patient benefits gained through the use of telemedicine.
03.22	Identify modality types that may be incorporated into a PACS.
03.23	Define digital imaging and communications in medicine (DICOM).
03.24	Describe data flow for a DICOM image from an imaging modality to a PACS.
03.25	Describe HIPAA concerns with electronic information.

03.26	Identify common problems associated with retrieving/viewing images.	
03.27	Describe the components and the operation of a conventional simulator.	
03.28	Analyze relationships of factors affecting image contrast, density and resolution to determine optimal image quality.	
03.29	Apply techniques to enhance image details and reduce image distortion.	
03.30	Determine artifact types, cause and preventive measures.	
03.31	Explain the basic principles of image formation for each of the following modalities: magnetic resonance (MR), ultrasound imaging and nuclear medicine.	
03.32	Describe and explain functions of the components of the computed tomography (CT) imaging system.	
03.33	Differentiate between conventional and spiral/helical CT scanning.	
03.34	List the CT computer data processing steps.	
03.35	Name the functions of the array processor used for image reconstruction.	
03.36	Explain the difference between reconstructing and reformatting an image	
03.37	Describe the application of the following terms to CT:	
	03.37.01	Pixel.
	03.37.02	Matrix.
	03.37.03	Voxel.
	03.37.04	Linear attenuation coefficient.
	03.37.05	CT/Hounsfield number.
	03.37.06	Partial volume averaging.
	03.37.07	Window width (ww) and window level (wl).
	03.37.08	Spatial resolution.
	03.37.09	Contrast resolution.
	03.37.10	Noise.
	03.37.11	Annotation.

	03.37.12	Region of interest (ROI).
	03.37.13	Standard vs. volumetric data acquisition.
	03.38	Identify the types and appearance of artifacts most commonly affecting CT images.
	03.39	Explain how artifacts can be reduced or eliminated.
	03.40	Describe current data storage techniques used in CT.
	03.41	Name the radiation protection devices that can be used to reduce patient dose in CT and describe the correct application of each.
04.0		Demonstrate a basic understanding of laws related to radiation therapy at both the state and federal levels. -The student will be able to:
	04.01	Apply concepts related to social, political, economic and historical issues to analyze the different sources of law.
	04.02	List the steps in a civil legal procedure and identify the potential role of a radiation therapist.
	04.03	Assess the role of effective communication skills in reducing legal action.
	04.04	Analyze negligence related to clinical practice issues of simulation, treatment delivery, patient assessment, patient education and quality assurance to determine if negligence is present.
	04.05	Examine the role of the radiation therapist in the informed consent process, patient rights and practice standards.
	04.06	Analyze safety programs to reduce patient injury.
	04.07	Examine the importance of documentation and maintenance of clinical practice records.
	04.08	Formulate a risk management program.
	04.09	Analyze the role of code of ethics, radiation therapy scope of practice and radiation therapy practice standards as guides to assess the appropriateness of professional actions.
	04.10	Discuss the practice of lifelong learning in maintaining professional competence
05.0		Demonstrate a functional knowledge of medical terminology required in radiation therapy. -The student will be able to:
	05.01	Identify primary language sources from which medical terms are derived.
	05.02	Define medical terms according to basic elements.
	05.03	Interpret language, abbreviations and symbols in the medical record.
06.0		Demonstrate knowledge of procedures and techniques related to the resolution of operational issues in radiation therapy. -The student will be able to:
	06.01	Identify CQI opportunities.

	06.02	Explain the differences between CQI and QA.
	06.03	Select appropriate CQI tools for specific situations.
	06.04	Apply CQI principles to specific situations.
	06.05	Discuss human resources' role in the work environment.
	06.06	Discuss the need for organizational and departmental accreditation.
	06.07	Recognize accreditation effects on radiation therapy operations.
	06.08	Use appropriate current procedural terminology (CPT) codes for professional and technical charges.
	06.09	Summarize the various types of insurance and the mechanisms necessary for approval of care.
	06.10	Discuss reimbursement for radiation therapy services.
	06.11	Compare the components and methods of developing and managing a departmental budget.
07.0	Demonstrate knowledge of the foundational principles and practices of radiation therapy. -The student will be able to:	
	07.01	Discuss the policies and procedures of the educational program.
	07.02	Discuss the policies and procedures of clinical education settings.
	07.03	Identify the responsibilities of a radiation therapy student.
	07.04	Use library/Internet resources pertinent to radiation oncology.
	07.05	Discuss maintaining patient and student confidentiality.
	07.06	Analyze the importance of multidisciplinary care of cancer patients.
	07.07	Discuss the philosophy and mission of health care delivery systems and educational programs.
	07.08	Incorporate key terms used in the principles and practice of radiation therapy.
	07.09	Identify the contents/sections of the patient's records.
	07.10	Explain radiation safety procedures for radiation therapy.
	07.11	Explain health safety procedures for personnel and patients.
	07.12	Differentiate between accreditation, credentialing, certification, registration, licensure and regulations.

	07.13	Explain the purposes, functions and activities of international, national, state and local professional organizations.
	07.14	Discuss the importance of professional and community commitment.
	07.15	Discuss the radiation therapist scope of practice, practice standards and professional code of ethics.
	07.16	Discuss the benefits of continuing education as related to improving the quality of patient care, professional development and personal enhancement.
	07.17	Discuss career advancement and opportunities for the radiation therapist.
08.0	Demonstrate knowledge of essential concepts related to pathophysiology.- The student will be able to:	
	08.01	Describe the physiological response in inflammation and cell injury due to pathological insult.
	08.02	Assess the predictive factors, including genetics, lifestyles, age and environment as they influence the development of cancer and associated diseases.
	08.03	Compare the body's response to hereditary, lifestyle, age and environmental factors.
	08.04	Given a specific oncologic-related disease, determine probable diagnostic, prognostic, staging, grading and the rationale for the appropriate therapeutic pathway.
	08.05	Given the histology of a neoplasm, determine the tumor characteristics.
	08.06	Given a common disease, anticipate the effects of the disease on the oncologic patient.
09.0	Demonstrate knowledge of the fundamental principles of radiation therapy. -The student will be able to:	
	09.01	Given diagnostic information about a particular cancer, determine the appropriateness of using radiation therapy as a primary treatment modality.
	09.02	Determine the medical and patient information necessary to develop a radiation therapy treatment plan.
	09.03	Determine the appropriate treatment energy for any given tumor type or location.
	09.04	Differentiate between beam modifiers and their uses with a variety of treatment energies.
	09.05	Determine the appropriate treatment setup aid, immobilization technique and beam modifier for a given treatment technique.
	09.06	Identify inconsistencies between treatment prescription and treatment plan.
	09.07	Develop a conventional simulation plan for a particular tumor to include steps needed prior to, during and after the procedure.
	09.08	Develop a CT simulation plan for a particular tumor to include steps needed prior to, during and after the procedure.
	09.09	Critique treatment images in relation to simulation images.
	09.10	Discuss the radiation therapist scope of practice and practice standards.

10.0	**Demonstrate knowledge of the principles of radiation therapy as it relates to the management of neoplastic disease.- The student will be able to:**	
	10.01	Distinguishes tumor histology to determine pathways associated with cancer and neoplastic disease.
	10.02	Examine the role of surgical, radiation and medical oncology to include immunotherapy (biological therapy) and personalized medicine in the management of neoplastic disease.
	10.03	Discuss multidisciplinary emerging approaches to neoplastic disease management.
	10.04	Discuss the role of radiation therapy in the management of all patient populations with benign and malignant diseases.
	10.05	Discuss epidemiologic and etiologic information pertinent to each neoplastic site.
	10.06	Discuss the clinical presentation for each anatomic neoplastic site.
	10.07	Discuss preventive methods/screening tools associated with each neoplastic site.
	10.08	Explain detection, diagnosis, grading and staging systems for each neoplastic site.
	10.09	Implement the principles and practice of simulation to prepare a patient for treatment.
	10.10	Apply the parameters of treatment field design and arrangement used to treat neoplastic diseases.
	10.11	Examine the role of radiation therapy in palliative disease management.
	10.12	Identify the treatment regimens and fractionalization schemes used in palliative disease management.
	10.13	Describe the role of radiation therapy in the management of oncology emergencies.
11.0	**Demonstrate the skills, procedures and knowledge required for effective quality management. The student will be able to:**	
	11.01	Discuss the components of a quality management (QM) program in developing a culture of safety in radiation oncology.
	11.02	Discuss the purpose, function and member's role on a quality management team.
	11.03	Explain federal, state and institutional accreditation standards and reporting regulations for quality management.
	11.04	Examine outcomes of quality management in radiation oncology.
	11.05	Explain the purpose, procedures and frequency for manual and electronic treatment documentation.
	11.06	Identify errors in treatment documentation.
	11.07	Describe the procedure for assuring accuracy of manual and electronic records.

11.08	Examine the purpose and function of record and verify systems.	
11.09	Examine the patient chart in terms of medical and legal issues.	
11.10	Discuss the significance of treatment outcomes for patient care, education and research in radiation oncology.	
11.11	Discuss the quality indicators to evaluate patient care areas.	
11.12	Explain the purpose, procedure and frequency for all QA and QM procedures in a radiation therapy department.	
11.13	Evaluate how the outcomes of QA and QM procedures impact patient care, education and research.	
11.14	Examine statistical reporting available through quality assurance computerization.	
11.15	Perform quality measures for computerized operation, data collection and reporting.	
11.16	Determine sources of malfunction on the treatment and simulation/localization units.	
11.17	Distinguish between safe and hazardous equipment operation.	
11.18	Comply with acceptable quality limits for treatment operation.	
11.19	Identify the source of error and determine the effect on treatment delivery, education and research.	
11.20	Differentiate between quality management programs.	
11.21	Discuss the importance of patient education in the quality management process.	
11.22	Discuss the importance of proper patient identification and treatment field documentation.	
11.23	Discuss aspects of clinical evaluation, therapeutic decision-making and informed	
11.24	Identify the key aspects of delivering a precise prescribed treatment dose.	
11.25	Discuss quality control procedures and recommended tolerances for simulation equipment, megavoltage treatment units and treatment planning systems.	
11.26	Discuss quality control procedures and recommended tolerances for the safe handling of brachytherapy sources and remote after loading equipment.	
11.27	Defend the rational for near miss and error report.	
11.28	Critique the safety in radiation oncology.	
12.0	Demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist. . - The student will be able to:	
12.01	Integrate laws and principles of radiation biology to the clinical practice of radiation therapy.	

12.02	Identify radiosensitive components of the cell.
12.03	Distinguish between units of radiation quantities and radiobiologic measures.
12.04	Differentiate between direct and indirect effects of ionizing radiation.
12.05	Explain factors affecting relative biological effectiveness (RBE).
12.06	Discuss the effects of electromagnetic and particulate radiations on cellular interactions.
12.07	Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.
12.08	Determine biologic damage due to radiation-induced chemical reactions.
12.09	Discuss radiation effects on the cell cycle.
12.10	Compare somatic and genetic effects of radiation.
12.11	Describe factors influencing radiation response of cells and tissues.
12.12	Discuss the laws of Bergonié and Tribondeau.
12.13	Interpret cell survival curves to determine radiosensitivity under numerous conditions.
12.14	Discuss the relationship of radiation quality and dose to systemic responses.
12.15	Describe radiation syndromes and factors influencing response.
12.16	Differentiate between linear, nonlinear, and threshold and nonthreshold dose response curves.
12.17	Describe the 5 Rs of radiobiology.
12.18	Describe the clinical significance of TD 5/5,TD 50/5 and QUANTEC.
12.19	Discuss the concept of LD50/30.
12.20	Compare the relationship of time, dose, fractionation, volume, distance and site to radiation effects.
12.21	Discuss the use of radiation response modifiers.
12.22	Describe the influence of chemotherapy and hyperthermia alone and in combination with radiation therapy.
13.0	Demonstrate proficient knowledge of physics pertinent to the understanding of radiations used in the clinical setting. .- The student will be able to:
13.01	Define the fundamental units of the English, metric and Système International d'Unites (SI) systems.

13.02	Calculate various unit conversions.
13.03	Demonstrate applications of the general principles that relate to inertia, work, energy and momentum.
13.04	Describe Bohr's theory of atomic structure.
13.05	Compare the characteristics and functions of a proton, neutron and electron.
13.06	Discuss the energy levels of the atom.
13.07	Define the terms relating to atomic nomenclature.
13.08	Compare covalent bonding and ionic bonding.
13.09	Describe the process of ionization.
13.10	Differentiate between the characteristics of a mixture, substance and element.
13.11	Classify the characteristics of an element using the periodic table.
13.12	Compare the characteristics of a molecule and compound.
13.13	Describe the nature of light.
13.14	Explain the relationship between wavelength, frequency and velocity.
13.15	Differentiate between the radiations of the electromagnetic (EM) spectrum.
13.16	Explain the relationship of energy and frequency to Planck's constant.
13.17	Distinguish between electrical charge and electrical field.
13.18	Describe the methods of electrification.
13.19	Explain the laws of electrostatics and their application.
13.20	Describe the properties and laws of magnetism.
13.21	Explain the electronic spin of an element to its potential magnetic properties.
13.22	Describe the principle of magnetic induction.
13.23	Define potential difference, current, resistance, circuit and electric power.
13.24	Compare the characteristics of direct and alternating currents.

	13.25	Compare electrical measuring devices.
	13.26	Discuss electrical protective devices.
	13.27	Discuss the interaction between electric and magnetic fields.
	13.28	Describe the characteristics and functions of a cathode and rotating anode.
	13.29	Describe the construction and function of tube housing.
	13.30	Identify the parts of an x-ray tube.
	13.31	Determine heat units and cooling characteristics of x-ray tube housings.
	13.32	Propose methods to extend tube life.
	13.33	Discuss application and components of automatic exposure devices.
	13.34	State the principles of x-ray production.
	13.35	Compare the production of bremsstrahlung with the production of characteristic radiations.
	13.36	Compare various photon interactions in terms of description of interaction, relation to atomic number and applications.
	13.37	Discuss relationships of wavelength and frequency to beam characteristics.
	13.38	Define units of radiation measurement and provide an example of its application.
14.0	Demonstrate the principles of radiation protection and safety for the radiation therapist. .- The student will be able to:	
	14.01	Distinguish between somatic and genetic effects of radiation exposure.
	14.02	Differentiate between stochastic and nonstochastic effects of radiation exposure.
	14.03	Defend the concept of as low as reasonably achievable (ALARA).
	14.04	Discuss the concept of negligible individual risk.
	14.05	Describe the legal and ethical radiation protection responsibilities of radiation workers.
	14.06	Use appropriate terminology and units when discussing radiation protection issues.
	14.07	Select the correct units of radiation for exposure, absorbed dose, dose equivalence and radioactivity.
	14.08	Discuss the interrelationship between relative biological effectiveness and quality factors.

14.09	Explain the theory, operation, applications and limitations of radiation detection devices.
14.10	State the authority, boundaries and regulations of the state and national regulatory agencies.
14.11	Discuss the requirements and responsibilities of the radiation safety officer.
14.12	Compare the various methods used for personnel monitoring.
14.13	State the exposure limits for occupational and nonoccupational individuals.
14.14	Explain techniques used to reduce unnecessary dose to the patient.
14.15	Develop an emergency action plan for equipment failure.
14.16	Discuss the principles of radiation protection room design factors.
14.17	Describe the elements of a radiation protection survey for an inpatient undergoing brachytherapy.
14.18	Calculate exposure doses based on time, distance and type of radioactivity.
14.19	Describe the procedure for a hot lab room survey.
14.20	Describe procedures to receive and ship radioactive materials.
14.21	Evaluate a record keeping system for radioactive sources to ensure inclusion of all required elements.
15.0	Demonstrate knowledge of the foundational concepts and competencies in assessment and evaluation of the patient for service delivery. .- The student will be able to:
15.01	Differentiate between the roles and responsibilities of health care team members treating cancer patients.
15.02	Demonstrate applications of professional self-care.
15.03	Examine different psychological aspects of dying.
15.04	Explain the dynamics of communicating with the cancer patient and family.
15.05	Recognize radiation side effects and complications and select the appropriate medical intervention.
15.06	Identify factors that influence a patient's emotional responses.
15.07	Formulate content for answers to questions frequently asked by patients.
15.08	Assess the physical condition of the patient before, during and after treatment delivery.
15.09	Demonstrate application of the principles of health safety.

	15.10	Discuss the principles of medication administration.
	15.11	Recognize common medications and explain their actions and side effects.
	15.12	Evaluate a patient for an adverse reaction to medication.
	15.13	Describe emergency response procedures.
	15.14	Describe the proper care of patients with tubes.
	15.15	Provide patient education for medical procedures.
	15.16	Assess the patient before, during and after brachytherapy procedures.
	15.17	Demonstrate the application of the principles of radiation protection during brachytherapy procedures.
	15.18	Assess the nutritional status of the cancer patient to provide nutritional education or intervention.
	15.19	Demonstrate proper use of the principles of patient safety and transfer.
	15.20	Provide appropriate patient education following patient assessment.
	15.21	Select patient education materials appropriate for patient needs.
	15.22	Compare conventional and integrative medicine.
16.0	Demonstrate an advanced understanding of the concepts and theories of radiation therapy physics. - The student will be able to:	
	16.01	Compare and contrast atomic structure and composition among the elements, including but not limited to particles (their location, energy level and charge), atomic number and mass number.
	16.02	Compare isotope, isotone, isobar and isomer.
	16.03	Discuss nuclear stability and types of radioactive decay.
	16.04	Categorize the four fundamental forces of nature.
	16.05	Differentiate between electromagnetic (EM) radiation and their characteristics.
	16.06	Describe the processes of ionization and excitation.
	16.07	Calculate radioactivity, decay constant, activity and half-life, average life and attenuation requirements for commonly used isotopes in radiation therapy.
	16.08	Differentiate between artificially produced and naturally occurring therapeutic nuclides.
	16.09	Identify the radioactive series and the decay schemes for commonly used radiation therapy nuclides.

16.10	Explain the various forms of radioactive equilibrium.
16.11	Identify nuclear reactions by recognizing the projectile and radiation emitted.
16.12	Define fission and fusion.
16.13	Discuss the activation of nuclides in terms of yield, probability, activity growth and saturation activity.
16.14	Describe methods of artificial production of radionuclides.
16.15	Describe x-ray production for linear accelerators.
16.16	Compare and contrast the factors that influence x-ray production and output.
16.17	Compare and contrast the energy ranges and characteristics of the various radiation therapy modalities (Grenz-ray through megavoltage).
16.18	Discuss all components and function in a linear accelerator.
16.19	Discuss methods of x-ray production in alternate therapy units (e.g., tomotherapy, stereotactic radiosurgery, etc.)
16.20	Compare the characteristics of other radiation therapy beams (cyclotron and other accelerated particles).
16.21	State the gamma energies and average gamma energy of cobalt 60 (60Co).
16.22	Describe the basic components of a 60Co unit.
16.23	Compare the characteristics of an isotope beam and an x-ray beam.
16.24	Explain linear energy transfer (LET).
16.25	Compare photon interactions with matter and classify radiations produced by direct and indirect ionization.
16.26	Explain major influencing factors of photon beam attenuation.
16.27	Describe the parameters of narrow beam geometry used in the measurement of attenuation.
16.28	Plot heteroenergetic and monoenergetic beam attenuation data.
16.29	Calculate half-value layer (HVL).
16.30	. Calculate the *homogeneity coefficient*.
16.31	Calculate attenuation requirements for beam modification devices.
16.32	Discuss activation of clinical accessories and alternate shielding materials due to photodisentigration.

	16.33	Explain charged particle interactions with matter, describing dose deposition, energy loss and shielding requirements.
	16.34	Define mass stopping power.
	16.35	Describe a Bragg curve.
	16.36	Discuss the purpose and importance of the National Institute of Standards and Technology (NIST).
	16.37	Discuss the purpose and importance of the Accredited Dosimetry Calibration Labs (ADCL).
	16.38	Demonstrate use of the appropriate type of radiation detector for given clinical applications.
	16.39	Calculate correction factors for chamber calibration, temperature, pressure and other factors used to correct a chamber reading.
	16.40	Discuss protocols used for external beam calibration.
	16.41	Analyze spot check data to make appropriate judgment decisions regarding machine treatment parameters. Describe the quality of a gamma-ray (γ) beam in terms of HVL, γ energy or mean γ energy/nuclide of origin.
	16.42	Describe beam filtration for the various external beam modalities, including but not limited to purpose, types of filters and their construction, energy considerations, inherent vs. added filtration and effect on HVL.
	16.43	Calculate the approximate mean energy of a megavoltage beam.
	16.44	Compare absorbed dose vs. exposure.
	16.45	Discuss the relationship between kinetic energy released in the medium (KERMA), exposure and absorbed dose.
	16.46	Calculate air dose to absorbed dose conversions in tissue, including but not limited to, energy considerations, applicable conversion factors, necessary instrumentation and methods.
	16.47	Discuss the clinical importance of phantom material and size when applying the Bragg-Gray Cavity Theory.
	16.48	Critique how dose distribution measured in a phantom is used to predict dose distribution in a patient.
	16.49	Compare the characteristics and composition of various phantoms.
	16.50	Compare source-skin distance (SSD) and isocentric methods of calibration.
17.0	Demonstrate proficiency in research methods and information literacy. .- The student will be able to:	
	17.01	Analyze research articles to determine the accuracy and validity of findings.
	17.02	Integrate information literacy concepts into a research project.
	17.03	Critique research projects to determine appropriateness and usefulness to the profession.
18.0	Demonstrate the skills, techniques and knowledge required for medical imaging methods to capture sectional anatomy. .- The student will be able to:	

	18.01	Relate the importance of imaging with computed tomography, magnetic resonance and PET-CT in radiation therapy.
	18.02	Differentiate between sagittal, coronal and axial planes of the body.
	18.03	Review the principles of imaging for imaging modalities using relevant terminology.
	18.04	Compare the imaging modalities for application to radiation therapy.
	18.05	Identify normal anatomical structures on sectional images.
	18.06	Identify topographic anatomy used to locate underlying internal structures.
	18.07	Describe image formation and orientation for computed tomography, magnetic resonance, positron emission tomography, ultrasonography and image fusion.
19.0	Demonstrate the skills, techniques and knowledge required for the clinical planning of patient treatment. .- The student will be able to:	
	19.01	Compare photon isodose curves for clinically relevant photon beams.
	19.02	Describe the general influencing factors that distinguish various isodose curves.
	19.03	Determine internal and external patient factors that influence a beam's distribution and apply isodose correction methods.
	19.04	Describe methods of determining a patient's external contour, definition of internal structures and volumes of interest used in treatment planning.
	19.05	Identify organs and tissues at risk and their dose limitations using published tolerance dose tables.
	19.06	Describe how biologic effective dose is influenced by prescription and treatment variables.
	19.07	Compare fractionation schemes.
	19.08	Discuss the integral dose concept.
	19.09	Use appropriate factors for treatment calculations.
	19.10	Describe the interrelationships of the various factors used in treatment calculations.
	19.11	Perform dose calculations for external photon and electron beam treatments for all clinical variations.
	19.12	Calculate the absorbed dose to off-axis points of interest.
	19.13	Compare absorbed doses within a treatment volume with beam variations.
	19.14	Explain algorithms incorporated into treatment planning computers.
	19.15	Describe the clinical applications for moving beam techniques.

19.16	Describe the past pointing technique.
19.17	Calculate equivalent squares using various methods and consider the limitations of each.
19.18	Describe the effect of asymmetric beam collimation on dose distribution.
19.19	Describe methods for determining dose distribution at points outside the treatment field.
19.20	Calculate dose under a block.
19.21	Evaluate a variety of treatment plans for clinical use.
19.22	Identify all possible techniques that may be employed to clinically match adjacent fields.
19.23	Describe the multiple junction shift methods.
19.24	Examine hot and cold regions that occur with the various matching methods, and describe the methods used to eliminate them.
19.25	Describe procedures for permanent record and legal documentation of matching fields.
19.26	Analyze dose distributions to determine the need for beam modifiers.
19.27	Compare various methods of tissue compensation and the dosimetric impact.
19.28	Examine the fabrication of 2-D and 3-D compensators.
19.29	Construct manual and computerized isodose curves.
19.30	Differentiate between isodose distributions for all clinical variations.
19.31	Evaluate possible corrections for treatment errors to correct misadministration of prescribed dose.
19.32	Differentiate between the treatment planning terms: maximum, minimum, mean, modal and median dose.
19.33	Describe International Commission on Radiological Units (ICRU) recommendations on dose variance within a target volume and the effect that variances may have on cure rates, local control and tolerance.
19.34	Analyze dose volume histograms relative to treatment planning.
19.35	Evaluate patient changes to determine the integrity of a treatment plan.
19.36	Compare electron beam depth dose characteristics for various energies.
19.37	Identify clinical factors that would influence beam type and energy selection.
19.38	Differentiate between standard treatment distance and virtual distance.

19.39	Discuss why equivalent squares used with photon beams are inappropriate with electron beams.
19.40	Describe how inhomogeneities influence electron beam path.
19.41	Discuss the considerations of matching an electron field to other adjacent photon or electron fields.
19.42	Analyze which shielding materials and thickness would be needed to attenuate electron beams to appropriate levels.
19.43	Describe how electron shielding materials should be arranged for external vs. internal shielding.
19.44	Discuss changes in dose rate and dose distribution with changes in blocking and electron energy.
19.45	Compare calculations of shielding thicknesses to measured data for electron beams.
19.46	Determine why specific isodose lines are prescribed for various clinical situations involving critical and noncritical structures.
19.47	Calculate percentage depth dose for 10%, 50%, 80% and 90% lines for various electron energies.
19.48	Describe the considerations in the clinical application of special electron treatments, including total skin irradiation and arc therapy.
19.49	Compare the general isodose pattern of particle beams.
19.50	Determine clinical usefulness of various beam types and the clinical implications involved.
19.51	Describe the various imaging modalities in tumor localization and planning.
19.52	Discuss planning techniques used to accommodate the treatment volume shape.
19.53	Discuss isocenter localization for radiosurgery.
19.54	Identify vital structures considered during treatment planning.
19.55	Compare single dose delivery to fractionated dose delivery schedules.
19.56	Discuss the need for specific equipment used to deliver radiation for conformal therapy.
19.57	Discuss the purpose and contents of the ICRU Report 62 and supplements.
19.58	Discuss the computer system features necessary for conformal therapy treatment planning.
19.59	Identify common sites amenable to conformal therapy and the typical doses employed for those sites.
19.60	Compare configurations of multileaf collimation systems.
19.61	Discuss considerations for multileaf collimators.

19.62	Review the differences between static and dynamic multileaf collimation systems.
19.63	Identify appropriate clinical applications for brachytherapy.
19.64	Compare and contrast brachytherapy delivery systems.
19.65	Describe the techniques and applicators used for intracavitary, interstitial and endovascular brachytherapy procedures.
19.66	Explain how simulation and CT data is used for source localization.
19.67	Discuss the objective of treatment planning for brachytherapy procedures.
19.68	Summarize dose specification and prescription techniques for different types of implants.
19.69	Describe optimization techniques used in computer aided dose calculations.
19.70	Discuss record keeping requirements for radioactive material.
19.71	State radiation safety requirements for brachytherapy procedures.
19.72	Identify appropriate clinical applications for using intensity modulated radiation therapy (IMRT).
19.73	Describe the general flow of the IMRT process from patient immobilization through treatment delivery.

Laboratory Activities

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

Clinical education has been established for the students in these programs. It is designed to permit accurate assessment of the knowledge, skills and abilities of students in the clinical education component of the program. After completion of the prerequisite practice of radiotherapeutic procedures, students indicate readiness for evaluation in a specific category to the clinical affiliate or faculty in the assigned clinical education center.

Clinical education and laboratory activities facilitate student rotations to provide them equitable opportunity to achieve the program clinical objective utilizing multiple affiliates. The resulting clinical rotation and laboratory practicum provides students with patient treatment techniques utilizing a variety of megavoltage equipment, radiation therapy patient care procedures, localization and treatment, radiation therapy physics including dosimetry, machine calibration, quality assurance, handling of sealed radioactive sources and protection, follow up, patient care and patient recordkeeping.

Special Notes

The program is designed to provide the radiation therapy community with workers who, under the supervision of a Radiation Oncologist, uses ionizing radiation to treat disease. The curriculum provides students an opportunity to develop technical and social skills through experiences in the clinic, classroom, and laboratory.

This program meets the Department of Health 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.

The program must be accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 900, Chicago, Illinois 60606-2901, (312) 704-5300, or by the Southern Association of Colleges and Schools to enable graduates to become candidates for examination in Radiation Therapy Technology by the American Registry of Radiologic Technologists. It may also be approved by the Department of Health, Bureau of Radiation Control so that the graduate is eligible for licensure in Florida as a certified Radiation Therapy Technologists. As specified in Chapter 468 Part IV F.S. and 64E-3 F.A.C.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e. radiologic technology, etc.). Upon the successful completion of the program the student will receive a Radiation Therapy Specialist Certificate.

Program completers will be eligible to make application to take the National Registry examination. For further information contact:

American Registry of Radiologic Technologists (ARRT)
1255 Northland Drive
St. Paul, MN 55120
(612) 687-0048
www.arrt.org

Students are encouraged to become members of their appropriate professional organizations such as the American Society of Radiologic Technologists (ASRT), Florida Society of Radiologic Technologists (FSRT) and its' local affiliate.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Central Sterile Processing Technologist**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090903
Program Type	College Credit Certificate (CCC)
Program Length	30 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9093 Medical Equipment Preparers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Health Sciences AS degree program (1351000002).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

This program is designed to prepare students for employment as central sterile processing technicians SOC Code 31-9093.00 (Medical Equipment Preparers), central service technicians.

The content includes but is not limited to central services departmental organization and function; basic anatomy, physiology, microbiology and chemistry related to central service activities; quality assurance; infection control and isolation techniques, principles of safety; principles, methods and controls of sterilization processes; cleaning, processing, packaging, distributing, storing, and inventory control of sterile goods, instruments, trays, and equipment; medical terminology; surgical instrumentation; basic computer skills, interpersonal and job seeking skills, fundamentals of

communication, case cart management, laparoscopic specialty, orthopedic specialty, flexible scope processing , shift supervisory skills and procurement of supplies and equipment.

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

Standards

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

01.0 Demonstrate knowledge of the health care delivery system and health occupations.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0 Demonstrate legal and ethical responsibilities.
04.0 Demonstrate an understanding of and apply wellness and disease concepts.
05.0 Recognize and practice safety and security procedures.
06.0 Recognize and respond to emergency situations.
07.0 Recognize and practice infection control procedures.
08.0 Demonstrate an understanding of information technology applications in healthcare.
09.0 Demonstrate employability skills.
10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0 Apply basic math and science skills.
12.0 Demonstrate language arts knowledge and skills.
13.0 Solve problems using critical thinking skills, creativity and innovation.
14.0 Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
15.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
16.0 Demonstrate the roles and responsibilities of the central supply worker.
17.0 Recognize basic principles of microbiology.
18.0 Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items.
19.0 Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers.
20.0 Describe how central service is involved in controlling infections in hospitals.
21.0 Explain the purpose of Occupational Safety and Health Act (OSHA).
22.0 Describe supply distribution systems and the principles of inventory control.
23.0 Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the specialty.
24.0 Demonstrate the ability to recall and dispose of or reprocess outdated sterile supplies.
25.0 Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel.
26.0 Identify fundamentals of procurement skills.

Florida Department of Education
Student Performance Standards

Program Title: **Central Sterile Processing Technologist**
CIP Number: **0351090903**
Program Length: **30 Credit Hours**
SOC Code(s):   **31-9093**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Health Sciences AS degree program (1351000002). At the completion of this program, the student will be able to:
Students completing intended outcomes (12-26), in addition to the health careers core, will meet the requirements of Central Sterile Processing Technologist – CCC (SOC Code 31-9093).
12.0   Demonstrate language arts knowledge and skills – The students will be able to:
12.01   Locate, comprehend and evaluate key elements of oral and written information.
12.02   Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
12.03   Present information formally and informally for specific purposes and audiences.
13.0   Solve problems using critical thinking skills, creativity and innovation – The students will be able to:
13.01   Employ critical thinking skills independently and in teams to solve problems and make decisions.
13.02   Employ critical thinking and interpersonal skills to resolve conflicts.
13.03   Identify and document workplace performance goals and monitor progress toward those goals.
13.04   Conduct technical research to gather information necessary for decision-making.
14.0   Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment – The students will be able to:

	14.01	Describe the nature and types of business organizations.
	14.02	Explain the effect of key organizational systems on performance and quality.
	14.03	List and describe quality control systems and/or practices common to the workplace.
	14.04	Explain the impact of the global economy on business organizations.
15.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:	
	15.01	Employ leadership skills to accomplish organizational goals and objectives.
	15.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
	15.03	Conduct and participate in meetings to accomplish work tasks.
	15.04	Employ mentoring skills to inspire and teach others.
	15.05	Analyze attributes and attitudes of an effective leader.
	15.06	Recognize factors and situations that may lead to conflict. .
	15.07	Demonstrate effective techniques for managing team conflict.
16.0	Demonstrate the roles and responsibilities of the central supply worker. The student will be able to:	
	16.01	Describes professional standards related to personal hygiene and dress codes.
	16.02	Identifies relevant federal, state, and local guidelines, standards and regulations.
	16.03	Describes the function and workflow of the sterile processing department.
	16.04	Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, and reaching.
	16.05	Apply policies and procedures related to sterile processing functions (safety, infection control, disaster control, disaster, MSDS, incident reports, etc.).
	16.06	Describes importance of following device, equipment, instrument or supply manufacturer's instructions for processing, operation, and troubleshooting.
17.0	Recognize basic principles of microbiology -- The student will be able to:	
	17.01	Identify the main categories of microorganisms.
	17.02	Describe the life functions of microorganisms.
	17.03	Describe conditions affecting the growth of bacteria.

	17.04	Describe special methods used to destroy harmful microorganisms.
	17.05	List the helpful microorganisms.
	17.06	Describe how the body controls the growth of pathogenic microorganisms.
	17.07	Identify pathogenic microorganisms found in central service departments.
	17.08	Identify terminology related to microbiology.
18.0		Receive, decontaminate, clean, prepare, disinfect and sterilize reusable items -- The student will be able to:
	18.01	Describe the importance of thorough cleaning to the overall objectives of making items safe for patient use.
	18.02	Explain the importance of following manufacturers' instructions in cleaning each item for reprocessing.
	18.03	Describe the cleaning process for instruments, syringes, needles, rubber goods and equipment
	18.04	Describe the mechanism of action for ultrasonic machines and washer/sterilizers.
	18.05	Define processes for CJD Decontamination
	18.06	Distinguish correct reprocessing policies related to single use, limited use, versus reusable items.
	18.07	Demonstrate flexible endoscopic decontamination and leak testing.
	18.08	Demonstrates decontamination and proper handling of rigid scopes.
	18.09	Describe decontamination methods for drill systems and batteries
	18.10	Describe the function of case cart washers, and alternative methods of cleaning.
	18.11	Describe the need for testing and monitoring all decontamination machines for proper function and cleaning agents.
	18.12	Explain the importance of using correct chemicals for cleaning in regards to water quality, PH, filters, softeners, enzymes, lubricants.
	18.13	Describe the types, characteristics, and uses of chemicals, solutions, and gases utilized for decontamination. (Detergents, disinfectants, enzymatics, germicides).
	18.14	Describe the types of sterilizers and methods of sterilization.
	18.15	Demonstrate the process of decontamination for instrumentation and equipment.
	18.16	Describe the factors affecting decontamination (water temperature, loading procedures, water impurities, opening and disassembling)
	18.17	Describe the primary objectives in selecting the correct packaging materials for both the individual item and the sterilization method to be used.

	18.18	Describe the principles of packaging.
	18.19	Describe the characteristics of packaging materials in relationship to sterilization methods.
	18.20	Describe the principles of linen pack and tray construction/assembly.
	18.21	Describe the recommended labeling methodologies.
	18.22	Demonstrate the wrapping of procedures trays, instruments and other supplies.
	18.23	Explain the principles involved in loading different kinds of wrapped packs or packages into a sterilizer to be assured of steam or gas penetration.
	18.24	Recognize equipment malfunction and list corrective actions.
	18.25	Describe how sterile supplies should be handled.
	18.26	Identify basic surgical instruments and accessories.
19.0	Demonstrate the use of sterilization process monitors, including temperature and frequency of appropriate chemical indicators and bacterial spore tests for all sterilizers -- The student will be able to:	
	19.01	Describe the types of sterilization, sterilization cycles, and parameters for each.
	19.02	Describe the importance of the manufacturer's recommendations for the safe operation of each type of sterilizer.
	19.03	Describe the methods of sterilization monitoring.
	19.04	Demonstrate the process of preparing and documenting the sterilizer load contents for each sterilizer correctly according to the manufacturer's recommendations.
	19.05	Demonstrate the operation, testing, and monitoring of sterilizers.
	19.06	Demonstrate the ability to interpret and document monitoring devices, printouts, and charts accurately for each sterilization system utilized.
	19.07	Identify the standards for, and facility policy regarding, frequency of monitoring for all sterilizers.
20.0	Describe how central service is involved in controlling infections in hospitals -- The student will be able to:	
	20.01	Describe nosocomial infections.
	20.02	Describe the types of isolation.
	20.03	Describe the organization and functions of CS.
	20.04	Describe the CS responsibilities for infection control and traffic patterns when in the operating room and other departments.
	20.05	Identify proper storage and transportation standards for supplies in the facility (receivables, sterile, clean, or contaminated).

20.06	Describe the organizational patterns of health care facilities.
21.0	**Explain the purpose of Occupational Safety and Health Act (OSHA) -- The student will be able to:**
21.01	Describe how employees are protected under OSHA.
21.02	Describe potential workplace hazards in CS. (wet floors, chemicals, fumes, gases, steam, electrical outlets, body fluids, microorganisms, sharps, and medical wastes.)
21.03	Describe the role preventive maintenance plays in patient and personnel safety in the hospital.
21.04	Explain the purpose of Florida's "Right to Know" law and its provisions.
21.05	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up. Implement appropriate The Joint Commission patient safety goals.
22.0	**Describe supply distribution systems and the principles of inventory control -- The student will be able to:**
22.01	Define the benefits of inventory control.
22.02	Describe the methods of inventory control.
22.03	Compare the advantages and disadvantages of each distribution methods.
22.04	Process a requisition marked "stat" - locate article, price, etc.
22.05	Describe the process of stock rotation.
22.06	Identify the uses of sterility maintenance covers.
22.07	Describe the processes for loaner instrumentation and equipment.
22.08	Describe the process of product evaluation.
22.09	Describe the procedures for tracking the usage of medical/surgical supplies, patient care equipment and specialty carts.
22.10	Describe the procedures for documenting supply and equipment charges.
22.11	Describe the methods of case cart preparation and the utilization of preference cards.
23.0	**Demonstrate the ability to identify and select appropriate instrumentation or equipment that meets the needs of the specialty. --The student will be able to:**
23.01	Describe instrument terminology and identify the anatomy of surgical instruments (jaws, shanks, box locks, rings, etc.)
23.02	Describe the types and functions of instruments.
23.03	Describe the types of instrument construction.

	23.04	Describe appropriate techniques for inspection and testing of instruments and procedures.
	23.05	Identify instrumentation and equipment by name and usage.
	23.06	Describe the methods of instrument identification, marking, and tracking of use.
	23.07	Describe the configuration of various instrument sets and specialty equipment.
	23.08	Describes the process regarding the manufacturer's recommendations for instrument and equipment care and handling, operation, maintenance and troubleshooting.
24.0	Demonstrate the ability to recall and dispose of or reprocess sterile supplies -- The student will be able to:	
	24.01	Explain the factors that affect how long a package can be considered safe for use.
	24.02	Explain the differences between event related, date related, and manufacturer recommendations.
	24.03	State the methods of determining expiration dates.
	24.04	List the steps in reprocessing outdated hospital packaged items.
	24.05	List conditions that would make a product unsafe for use
	24.06	Describe the use of tamper evident seals.
	24.07	Describe the methods of reprocessing.
	24.08	Identify standards and facility policies on reprocessing of single use items.
	24.09	Describe the process of recall for medical/surgical supplies.
25.0	Interpret and apply medical terminology and anatomical terms as they relate to equipment and supplies issued by central service personnel -- The student will be able to:	
	25.01	Identify word elements for medical terms.
	25.02	Relate anatomical concepts to orthopedic devices and other supplies and equipment issued by the CS Department.
26.0	Identify fundamentals of procurement skills -- The student will be able to:	
	26.01	Describe procurement system.
	26.02	Communicate with other hospitals, facilities, or company representatives for procurement of supplies and equipment.
	26.03	Describe several different methods of procurement of supplies.
	26.04	Describe basics of receiving items, including documentation of receiving and release to other facilities.

<h1 align="center">Additional Information</h1>

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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.

The standard length of this program is 900 clock hours or 30 credit hours. This includes the Health Careers Core (90 clock hours).

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

Inquiries about a voluntary certification for sterile processing and distribution may be made to:

International Association of Hospital Central Service Materiel Management (IAHCSMM)
http://www.iahcsmm.org/
213 West Institute Place, Suite 307, Chicago, IL 60610
Toll Free: 800-962-8274

OR

Certification Board for Sterile Processing and Distribution, Inc. (CBSPD)
http://www.sterileprocessing.org/cbspd.htm
2 Industrial Park Road-Suite 3
Alpha, NJ 08865

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the National Health Care Foundation Skill Standards Assessment will be taken with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Surgical Technology Specialist
Career Cluster: Health Science

CCC	
CIP Number	0351090904
Program Type	College Credit Certificate (CCC)
Program Length	49 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of Health Sciences AS degree program (1351000002).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as surgical technologists SOC 29-2055.

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical technology procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, and basic computer literacy.

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

Standards

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

01.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Demonstrate Central Supply Skills.
13.0   Use communication and interpersonal skills as related to surgical technology.
14.0   Demonstrate an understanding of the basic sciences related to surgical technology.
15.0   Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment
16.0   Describe and practice safety measures in the surgical environment.
17.0   Perform patient care procedures related to the surgical environment and describe methods for meeting patients' needs.
18.0   Demonstrate knowledge of the skills necessary to function safely and effectively.
19.0   Demonstrate knowledge of and assist with surgical procedures.
20.0   Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology.

Florida Department of Education
Student Performance Standards

Program Title: **Surgical Technology Specialist**
CIP Numbers: **0351090904**
Program Length: **49 Credit Hours**
SOC Code(s): **29-2055**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of Health Sciences AS degree program (1351000002). At the completion of this program, the student will be able to:
Students completing intended outcomes 12-20, in addition to the health careers core, will meet the requirements of the Surgical Technology Specialist-CCC (SOC Code 29-2055).
12.0   Demonstrate Central Supply skills. –The student will be able to:
12.01 Apply the principles of medical/surgical asepsis
12.02 Apply infection control techniques following Center for Disease Control (CDC) guidelines.
12.03 Inspect equipment and supplies for condition and quantity.
12.04 Identify principles and demonstrate techniques of disinfection and sterilization.
12.05 Identify/correct and/or report package integrity.
12.06 Decontaminate instruments equipment and environment.
12.07 Replenish supplies and equipment.
12.08 Identify instruments, equipment and supplies for any surgical procedure.

	12.09	Demonstrate the ability to package goods and supplies as required.
	12.10	Describe various supply distribution methods.
	12.11	Demonstrate ability to label items correctly.
	12.12	Discuss and use various inventory control systems.
	12.13	Demonstrate case cart preparation and management.
13.0	Use communication and interpersonal skills as related to surgical technology. – The student will be able to:	
	13.01	Use various forms of communication in the role of surgical technologist.
	13.02	Maintain current documentation in the clinical setting.
	13.03	Demonstrate proper use of the intercom.
14.0	Demonstrate an understanding of the basic sciences related to surgical technology. – The student will be able to:	
	14.01	Describe the concepts of microbiology and relate key principles to the surgical environment.
	14.02	Relate anatomy and physiology, to surgical procedures.
	14.03	Apply the principles of medical/surgical asepsis to surgery.
	14.04	Apply infection control techniques following Center for Disease Control (CDC) guidelines for surgery
	14.05	Discuss the principles of electricity and robotics as they relate to surgery.
15.0	Demonstrate knowledge of pharmacology and math calculation principles related to the surgical environment.-The student will be able to:	
	15.01	Describe pharmacological concepts relative to the administration of all anesthesia types.
	15.02	Define both pharmacokinetics and pharmacodynamics.
	15.03	Identify classification, actions, and effects, of common drugs used at the field, and within the surgical environment.
	15.04	Identify correct medication form and method of application.
	15.05	Apply the six rights of medication administration.
	15.06	Measure and pour sterile solutions.
	15.07	Label properly all fluids and medications within the sterile field

	15.08	Apply correct mathematical skills related to dosage available versus dosage needed, when drawing up or accepting medications.
	15.09	Apply correct unit of measure for each medication.
	15.10	Verify correct medication doses with circulator.
	15.11	Construct medication ratio and proportions correctly for surgeon use.
	15.12	Define the appropriate methods of transferring and accepting medications onto the sterile field.
	15.13	Analyze and assemble correctly all medication supplies, for each drug to be used on the sterile field.
	15.14	Maintain an accurate account of amount of each medication used at the field.
16.0	Describe and practice safety measures in the surgical environment. – The student will be able to:	
	16.01	Inspect emergency equipment and supplies for condition and quantity.
	16.02	Check electrical equipment in the operating room.
	16.03	Identify appropriate safety measures for laser surgery.
	16.04	Implement appropriate Joint Commission patient safety goals.
	16.05	Describe the role of the surgical technologist in a disaster situation.
17.0	Perform patient care procedures related to the surgical environment and describe methods for meeting patient's needs. – The student will be able to:	
	17.01	Perform patient transfer/transportation techniques used in the operating room.
	17.02	Assist with positioning and apply safety devises to the patient for surgery
	17.03	Ground patient and connect electrosurgical cautery unit.
	17.04	Describe the roles of anesthetist and circulating nurse during induction.
	17.05	Prepare the operative site.
	17.06	Perform steps for Foley catheter insertion and connecting to drainage
	17.07	Apply sterile dressing and bandage.
18.0	Demonstrate knowledge of the skills necessary to function safely and effectively. – The student will be able to:	
	18.01	Select and verify instruments, equipment and supplies, including any implants needed for surgical procedures using surgeon preference/procedure cards including those identified as "have available/hold items". .

	18.02	Measure and pour sterile solutions.
	18.03	Perform surgical scrub.
	18.04	Put on sterile gown and gloves.
	18.05	Drape tables and solution stands.
	18.06	Set up sterile mayo stand and instrument table.
	18.07	Prepare sutures, ligatures, ties.
	18.08	Prepare, pass, and monitor amount given for medications used on the sterile field.
	18.09	Assist surgeon in gowning and gloving.
	18.10	Assist in draping patient, pass instruments, monitor field.
	18.11	Identify/correct and/or report breaks in aseptic technique.
	18.12	Monitor body fluids, e.g. blood loss, ascites.
	18.13	Perform complete counts with R.N.
	18.14	Identify principles and demonstrate techniques of disinfection and sterilization.
	18.15	Assist in removing/applying cast.
	18.16	Assist in maintaining retraction, cutting suture and holding instruments as directed by the surgeon in the second assistant role.
	18.17	Prepare specimen for laboratory analysis.
	18.18	Decontaminate instruments equipment and environment.
	18.19	Replenish supplies and equipment.
	18.20	Describe how to update procedure/preference cards.
	18.21	Apply electrical knowledge to safe patient care practices in surgery.
19.0	Demonstrate knowledge of and assist with surgical procedures. – The student will be able to:	
	19.01	Identify preoperative diagnosis, common complications, and operative pathology relating to specific surgical procedures.
	19.02	List and describe types of incisions and wound closures.

	19.03	Describe the usual sequence of a common surgical procedure (i.e. incision into the anatomy, dissection of the anatomy and closing of the anatomy.)
	19.04	Demonstrates the ability to select the appropriate instrument, equipment, or supply for each step of the procedure.
	19.05	Demonstrates proper cost effective methods including the ability to identify "have available/hold items"...
20.0	Demonstrate an understanding of legal and ethical responsibilities specific to surgical technology. – The student will be able to:	
	20.01	State methods, standards and aids that assist a surgical technologist with interpreting and following legal responsibilities.
	20.02	Describe the role of the surgical technologist in the healthcare setting. Provide health care within the ethical/legal framework of the surgical technologist's role.

Additional Information

Laboratory Activities

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

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:6.

Special Notes

Selected portions of this program may be utilized to provide additional skills to enable nursing graduates to become employable in operating rooms as surgical technologists. The program should meet the requirements of the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES).

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health 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.

After successful completion of a Commission on Accreditation of Allied Health Education Programs (CAAHEP) or Accrediting Bureau of Health Education Schools (ABHES) accredited program, students are eligible to take the National Board of Surgical Technologist and Surgical Assisting (NBSTSA), Certified Surgical Technologist exam.

Please contact NBSTSA for more information on this exam:

National Board of Surgical Technologist and Surgical Assisting (NBSTSA)
http://nbstsa.org/
6 West Dry Creek Circle, Suite 100 Littleton, Colorado 80120
Toll-free: (800) 707-0057

Outcomes 01-11 are referred to as the Health Science Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

**Florida Department of Education
Curriculum Framework**

Program Title: **Surgical First Assistant**
Career Cluster: **Health Science**

CCC	
CIP Number	0351090908
Program Type	College Credit Certificate (CCC)
Program Length	59 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2055 Surgical Technologists 31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Surgical First Assisting AS degree program (1351090900).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as a Surgical First Assistant Expanded Function (Surgical technologists is SOC 29-2055).

The content includes, but is not limited to, communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care procedures, surgical procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, basic computer literacy and surgical first assistant skills such as preoperative duties, aid in exposure, hemostasis, closure, intraoperative technical functions, and postoperative duties under the direction and supervision of the surgeon.

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

Standards

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

01.0 Demonstrate knowledge of the health care delivery system and health occupations.
02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0 Demonstrate legal and ethical responsibilities.
04.0 Demonstrate an understanding of and apply wellness and disease concepts.
05.0 Recognize and practice safety and security procedures.
06.0 Recognize and respond to emergency situations.
07.0 Recognize and practice infection control procedures.
08.0 Demonstrate an understanding of information technology applications in healthcare.
09.0 Demonstrate employability skills.
10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0 Apply basic math and science skills.
12.0 Demonstrate Central Sterile Processing Skills.
13.0 Demonstrate Competencies in the Core Components of the Surgical First Assistant - Communication and Interpersonal Skills.
14.0 Demonstrate an understanding of the basic sciences related to Surgical First Assisting.
15.0 Describe and practice safety measures in the surgical environment.
16.0 Perform patient care procedures related to the surgical environment and describe methods for meeting patients' needs.
17.0 Demonstrate knowledge of the basic surgical skills necessary to function safely and effectively.
18.0 Demonstrate Competencies in the Core Components of the Surgical First Assistant - Knowledge and Skills.
19.0 Demonstrate Competencies in the Core Components of the Surgical First Assistant - Legal and Ethical Responsibilities.

Florida Department of Education
Student Performance Standards

Program Title: **Surgical First Assistant**
CIP Number: 0351090908
Program Length: 59 credits
SOC Code(s): 29-2055; 31-9099

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Surgical First Assisting AS degree program (1351090900). At the completion of this program, the student will be able to:
Students completing intended outcomes 12-19 will meet the requirements of the Surgical First Assistant –CCC Program (SOC Code 29-2055).
12.0   Demonstrate Central Sterile Processing Skills --The student will be able to:
12.01   Apply the principles of medical/surgical asepsis.
12.02   Apply infection control techniques following Center for Disease Control (CDC) guidelines.
12.03   Identify relevant federal, state and local guidelines, standards and regulations.
12.04   Apply ergonomic considerations and appropriate body mechanics for lifting, turning, pulling, pushing, reaching, and other work related activities.
12.05   Describe the importance of following device, equipment, instrument or supply manufacturer's instructions for processing, operation, and troubleshooting.
12.06   Analyze and demonstrate the decontamination and disinfection process for instruments equipment and the environment including unique situations such as heat sensitive, hazardous, or delicate.
12.07   Demonstrate appropriate techniques for inspection and testing of equipment and supplies for condition, quantity and quality.
12.08   Demonstrate the ability to package and label instruments, good, and supplies correctly.

	12.09	Evaluate and demonstrate the use of sterilization process monitors, sterilization units, sterilizations cycles and documentation methods noting the safe parameters for each.
	12.10	Identify proper storage and transportation standards for supplies in the facility (receivables, sterile, clean, or contaminated).
	12.11	Demonstrate ability to identify/correct and/or report package integrity.
	12.12	Demonstrates restocking of supplies and equipment.
	12.13	Demonstrates the ability to identify and select appropriate instruments, equipment and supplies for any surgical procedure.
	12.14	Demonstrate the ability to package and label goods and supplies as required.
	12.15	Describe various supply distribution methods.
	12.16	Discuss the principles and use of various inventory control systems.
13.0		Demonstrate Competencies in the Core Components of the Surgical First Assistant - Communication And Interpersonal Skills -- The student will be able to:
	13.01	Use various forms of communication in the role of Surgical First Assistant to communicate relevant, accurate and complete information in a concise and clear manner.
	13.02	Collaborate with the patient, surgeon, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's surgical care to promote positive outcomes.
	13.03	Demonstrate proper use of communication technology including but not limited to intercoms, computers, paging systems.
	13.04	Demonstrate patient interviewing techniques.
	13.05	Facilitate teamwork as a patient advocate and assistant to the surgeon.
	13.06	Demonstrate competency regarding reporting and documentation responsibilities in the clinical setting.
	13.07	Identify characteristics and recognize methods of creating effective teams.
	13.08	Employ leadership skills to accomplish organizations goals and objectives.
	13.09	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
	13.10	Conduct and participate in meetings to accomplish work tasks.
	13.11	Employ mentoring skills to inspire and teach others.
14.0		Demonstrate An Understanding Of The Basic Sciences Related To Surgical First Assisting--The student will be able to:
	14.01	Apply knowledge of the microbial environment to the surgical care of the patient.
	14.02	Relate anatomy, physiology and pathophysiology, to surgical procedures.

	14.03	Apply the principles of medical and surgical asepsis to surgery.
	14.04	Discuss electricity, computers, and robotics as they relate to surgery.
	14.05	Describe pharmacological concepts relative to the administration of all anesthesia types including the role of the anesthetist and the circulator during induction.
	14.06	Identify the classification, actions and effects of common drugs used at the field, and within the surgical environment.
	14.07	Apply knowledge of the pharmacologic agents used in the treatment of the surgical patient.
15.0	Describe And Practice Safety Measures In The Surgical Environment--The student will be able to:	
	15.01	Inspect emergency equipment and supplies for condition and quantity.
	15.02	Implement appropriate Joint Commission patient safety goals.
	15.03	Apply knowledge of surgical hazards to safe patient care.
	15.04	Demonstrate the safe inspection and utilization of laser, electrical, endoscopic, and robotic equipment.
	15.05	Describe and practice appropriate safety measures for laser, electrical, endoscopy and robotic surgery.
	15.06	Identify the correct medication form and method of application.
	15.07	Apply the six rights of medication administration.
	15.08	Label properly all fluids and medications within the sterile field.
	15.09	Describe the role preventive maintenance, prevention, correction, and documentation plays in patient and personnel safety and the prevention of medical errors in the surgical setting.
	15.10	Explain the purpose of Florida's "Right to Know" law and its provisions.
	15.11	Describe the protocol for personal injury including the completion of incident/occupancy reports and follow up.
	15.12	Describe the preparation and planning, detection and communication, incident management and support systems, safety and security, clinical/public health assessment and intervention, contingency, continuity and recovery and the public health law and ethics of All-Hazards Preparation for disasters.
	15.13	Conduct technical research to gather information for decision-making.
	15.14	List and describe quality control systems and/or practices common to the workplace.
	15.15	Employ critical thinking skills independently and in teams to solve problems, resolve conflicts, and make decisions.
16.0	Perform Patient Care Procedures Related To The Surgical Environment And Describe Methods For Meeting Patient's Needs--The student will be able to:	

	16.01	Perform safe patient transfer/transportation techniques used in the perioperative setting.
	16.02	Apply the principles of safe positioning and restraining patient for surgery.
	16.03	Apply the principles of safe usage of the electrosurgical unit, laser, endoscopes, robotic and other equipment utilized during the perioperative period.
	16.04	Identify the roles of the members of the surgical team during each phase of surgery.
	16.05	Perform steps for foley catheter insertion and connection to drainage.
	16.06	Assist surgeon with the perioperative care of the surgical patient.
	16.07	Apply the perioperative principles of preoperative patient assessment and preparation, techniques and methods of anesthesia related to the type of surgical procedure and principles of postoperative anesthetic management.
	16.08	Apply correct mathematical skills related to dosage available versus dosage needing when drawing up or administering medications.
	16.09	Apply knowledge of wound management techniques, including suturing techniques in the operating room, perioperative care of special needs patients, and perioperative assessment of the skin.
17.0	Demonstrate Knowledge Of The Basic Surgical Skills Necessary To Function Safely And Effectively--The student will be able to:	
	17.01	Demonstrate an understanding of the disease processes and the relationship of the processes to the specific types of pathologies according to body systems.
	17.02	Describe the preoperative diagnosis, operative anatomy, physiology and pathology, usual incision, wound closure techniques, medications utilized, common complications, and the usual sequence related to specific surgical procedures.
	17.03	Select instruments, equipment and supplies for surgical procedures using surgeon preference/procedure cards.
	17.04	Measure and pour sterile solutions.
	17.05	Perform surgical scrub.
	17.06	Don sterile gown and gloves.
	17.07	Create a sterile field using sterile drapes for instrument tables and solution stands.
	17.08	Set up sterile mayo stand and instrument table.
	17.09	Prepare sutures, ligatures, ties.
	17.10	Prepare, pass, and monitor amount given for medications utilized on the sterile field.
	17.11	Assist surgeon in gowning and gloving.
	17.12	Assist in draping patient, pass instruments, monitor field.

	17.13	Identify/correct and/or report breaks in aseptic technique.
	17.14	Monitor fluids including irrigation fluids and body fluids lost, e.g. blood loss, ascites.
	17.15	Assist in ensuring the prevention of foreign body retention including completing counts with R.N..
	17.16	Demonstrate the ability to select the appropriate instrument, equipment, or supply for each step of the procedure.
	17.17	Assist in removing/applying cast.
	17.18	Prepare specimen for laboratory analysis.
	17.19	Prepare and/or update procedure cards.
	17.20	Demonstrates knowledge of and assists with surgical procedures while functioning in the roles of scrub and assistant circulator.
	17.21	Demonstrates proper cost effective methods regarding resources utilized during the care of the patient.
Surgical First Assistant Advanced Skills
18.0		Demonstrate Competencies In The Core Components of the Surgical First Assistant - Knowledge and Skills -- The student will be able to:
	18.01	Prioritize care or actions to be taken in a given circumstance to expedite the operative procedure or emergency situation.
	18.02	Describe preoperative diagnosis, common complications, operative pathophysiology and postoperative care related to the specific surgical procedures performed.
	18.03	Analyze and relate common patient diagnostic and monitoring results to the surgeon as applicable to the surgical specialty.
	18.04	Assist surgeon and/or healthcare team with preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, draping, and sterile setup preparation.
	18.05	Demonstrate and describe types of incisions.
	18.06	Identify types of tissue, organs, and gross anatomical structures correctly during surgical procedures.
	18.07	Demonstrate appropriate tissue handling techniques including the care of the surgical specimens.
	18.08	Provide appropriate exposure and visualization of the operative field for the surgeon.
	18.09	Describe the appropriate sequence for common surgical procedures.
	18.10	Utilize appropriate techniques to assist with hemostasis.
	18.11	Demonstrate appropriate safe surgical techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known surgical hazard.
	18.12	Participate in volume replacement or autotransfusion techniques and medication administration as appropriate.

18.13	Select appropriate instruments and supplies for the type of tissue.
18.14	Demonstrate competence with technology, the use of instruments, equipment supplies and medications for the surgical procedure.
18.15	Use surgical instruments skillfully in ways consistent with their design and purpose.
18.16	Utilize appropriate techniques to assist with the closure of body planes.
18.17	Select and apply appropriate wound dressings.
18.18	Assist surgeon in securing drainage systems to tissue.
18.19	Evaluate patient and report appropriately any abnormal condition found post-op related to positioning.
18.20	Assist surgeon with postoperative care of the patient to facilitate proper patient care.
18.21	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, surgical misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and exposure, retraction and compression injuries.
18.22	Facilitate the continuity of care within and across the healthcare settings to access available resources and services.
19.0	Demonstrate Competencies In The Core Components Of The Surgical First Assistant - Legal And Ethical Responsibilities --The student will be able to:
19.01	State methods, standards and aids that assist a surgical first assistant with interpreting and following legal responsibilities.
19.02	Describe the importance of maintaining credentials and following the appropriate credentialing policy in accordance with hospital policy and appropriate laws and regulations.
19.03	Explain the job requirements.
19.04	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as a surgical assistant, and the professional skills necessary to fulfill the role.
19.05	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.

Additional Information

Laboratory Activities

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

In a simulated surgical environment, students practice preparing, setting up and maintaining a sterile field, sterilization and disinfection procedures, preparation of supplies and equipment for surgery, and patient preparation.

Clinical learning experiences in an operating room and related areas are an integral part of this program.

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

Special Notes

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health 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

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

The Surgical First Assistant Core Curriculum should be taught by qualified staff as outlined in the most recent approved CAAHEP (Commission on Accreditation on Allied Health Education Programs) accreditation standards and guidelines.

Entering students who have successfully completed the program 0317.021100, Surgical Technology or are currently Nationally Certified as a CST (Certified Surgical Technologist) or SA-C (Surgical Assistant-Certified) should be given appropriate advanced standing.

After successful completion of an approved and accredited surgical first assistant program, students are eligible to take the National Board of Surgical Technology and Surgical Assisting First Assistant exam as approved.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Diagnostic Medical Sonography Specialist**
Career Cluster: **Health Science**

<mark>NOTE: This program has been daggered for deletion with 2014-2015 being the last cohort of students permitted to enroll in the program. <u>After 2014-2015, no new students may be enrolled in this program.</u> Students already enrolled in the program may, at the District's discretion, continue taking courses in the program until completion. **Beginning in 2015-2016, new students should be enrolled in Diagnostic Medical Sonography Specialist (NEW) – CIP# 0351091005.**</mark>

CCC	
CIP Number	0351091001
Program Type	College Credit Certificate (CCC)
Program Length	42 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2032 Diagnostic Medical Sonographers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Diagnostic Medical Sonography Technology AS degree program (1351091000).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as diagnostic medical sonographers, SOC Code 29-2032, or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to anatomy, physiology and pathology of the abdominal, pelvic, and urogenital structures; physics; instrumentation; equipment standards; biological effect of ultrasound; patient care; clinical medicine; applications and limitations of ultra-sound; related diagnostic procedures; image evaluation; administration; first aid and cardiopulmonary resuscitation; employability skills; leadership and human relations skills; health and safety.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care.
13.0   Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis.
14.0   Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound
15.0   Demonstrate knowledge of the principles of Doppler.
16.0   Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting.
17.0   Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems.
18.0   Apply knowledge of the anatomy and scanning techniques related to superficial structures.
19.0   Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands.
20.0   Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis.
21.0   Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics.
22.0   Develop a continuous awareness of the disease processes.
23.0   Apply accumulated knowledge to the process of creating diagnostic sonograms.
24.0   Apply skills needed to complete diagnostic images of high quality from a variety of scanning units.

Florida Department of Education
Student Performance Standards

Program Title:	**Diagnostic Medical Sonography Specialist**
CIP Number:	**0351091001**
Program Length:	**42 credit hours**
SOC Code(s):	**29-2032**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Diagnostic Medical Sonography Technology (New) AS degree program (1351091004). At the completion of this program, the student will be able to:
Diagnostic Medical Sonography Specialist: The outcomes 12-24 complete the occupational completion point of Diagnostic Medical Sonography Specialist.
12.0 Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care –The student will be able to:
12.01 Explain the role of the sonographer.
12.02 Describe the relationship of ultrasound to other imaging modalities.
12.03 Describe and explain the proper uses of orientation and standard labeling of ultrasound images.
12.04 Explain the basic concepts of ultrasound equipment available and demonstrate safety in their use and basic techniques of scanning.
12.05 Explain and demonstrate the criteria for image evaluation and specifically of special sonographic parameters.
12.06 Demonstrate proper body mechanics to avoid Work Related Musculoskeletal Disorders when performing sonographic examinations.
12.07 Describe special problems encountered and methods related to medical ethics and law in Sonography.
12.08 Describe the organizational structure common to most hospitals with special emphasis placed on the role of the ultrasound department.

	12.09	Describe the relationship of the sonographer to the patients and their special needs.
	12.10	Demonstrate professional communication skills required on a daily basis in the health care setting.
	12.11	Explain and demonstrate the methods of patient preparation and care before and during a sonogram.
	12.12	Demonstrate proper body mechanics when transporting and assisting patients.
	12.13	Discuss current trends in sonographic technology and techniques.
13.0	Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis–The student will be able to:	
	13.01	Explain what sound is and its characteristics.
	13.02	Compare the difference between pulsed and continuous wave ultrasound.
	13.03	Explain amplitude and intensity of sound as it applies to Sonography.
	13.04	Describe the causes and effects of attenuation and acoustic impedance on ultrasound.
	13.05	Identify the causes and effects of incidence, scattering and refraction of ultrasound.
	13.06	Explain the Doppler Effect as it relates to ultrasound.
	13.07	Describe the factors of attenuation versus depth penetration of ultrasound in human tissue.
	13.08	Identify resolution and controlling factors of resolution as applied to Sonography.
	13.09	Discuss and demonstrate the basic principles governing sound and sound interaction in various types of tissue.
	13.10	Describe and demonstrate the conditions affecting sound transmission such as attenuating factors.
	13.11	Relate mathematical formulas to the interaction of sound with various mediums.
	13.12	Describe resolution and its effect on the final image.
	13.13	Describe and demonstrate the factors that control and determine axial, elevational and lateral resolution.
14.0	Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound–The student will be able to:	
	14.01	Describe piezoelectric effects.
	14.02	Describe transducer construction.
	14.03	Discuss historical perspectives related to the development of the ultrasound system.

	14.04	Explain and describe how signal processing affects image production and presentations.
	14.05	Discuss basic system operation in the form of block diagrams for real-time and Doppler image production.
	14.06	Describe the purpose and use of typical controls located on ultrasound systems.
	14.07	Identify methods of determining and assuring quality control both sonographically and photographically.
	14.08	Discuss common processing techniques including but not limited to harmonics, persistence, spatial compounding, panoramic imaging, and RES.
	14.09	Discuss causes, detection and control of factors that may create biologic effects in human tissue with insonation at the diagnostic medical sonography exposure level.
15.0	Demonstrate knowledge of the principles of Doppler –The student will be able to:	
	15.01	Explain the general principles of Doppler techniques and the Doppler formula.
	15.02	Describe how pulse wave Doppler is processed and displayed.
	15.03	Describe how color-flow Doppler is processed and displayed.
	15.04	Describe how power Doppler is processed and displayed.
	15.05	Identify normal and abnormal Doppler wave forms.
	15.06	Discuss the advantages and disadvantages of the various Doppler methods.
	15.07	Describe the purpose and use of typical controls used to optimize Doppler acquisition and display.
	15.08	Demonstrate skills required on a daily basis in the typical Sonography setting for obtaining and displaying Doppler.
16.0	Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting–The student will be able to:	
	16.01	Utilize patient information systems.
	16.02	Demonstrate appropriate transducer selection for specific sonographic application.
	16.03	Utilize amplification in all its forms to produce a diagnostic quality sonogram.
	16.04	Utilize power to produce a diagnostic quality sonogram while maintaining the ALARA principle.
	16.05	Utilize the various forms of processing to produce a diagnostic quality sonogram.
	16.06	Utilize the various types of scanning techniques and patient positioning required to produce diagnostic quality sonograms.
	16.07	To explain and recognize typical artifacts as found in sonographic imaging.

	16.08	Utilize test objects and phantoms.
17.0	Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems–The student will be able to:	
	17.01	Identify gross abdominal structures as demonstrated by ultrasound such as: the liver, gall bladder, aorta, inferior vena cava, stomach, pancreas, bowel, spleen, lymph nodes, retroperitoneum, and peritoneal cavity.
	17.02	Identify the gross upper abdominal organs in two planes.
	17.03	Identify the gross retroperitoneal organs, bowel and peritoneum in two planes.
	17.04	Explain the physiology of the upper abdominal organs and the related laboratory results.
	17.05	Explain the physiology of the retroperitoneal organs, bowel and peritoneum.
	17.06	Explain and demonstrate the protocol for sonographic examination of the upper abdominal organs.
	17.07	Explain and demonstrate the protocol for sonographic examination of the retroperitoneal organs, bowel and peritoneum.
	17.08	Explain the common pathologies related to the upper abdomen including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	17.09	Explain the common pathologies related to the retroperitoneal organs, bowel and peritoneum including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
	17.10	Explain screen orientation and its relationship to the upper abdomen and retroperitoneal structures.
	17.11	Describe and perform procedures of a complete ultrasound examination of the upper abdomen from preparation to reporting.
	17.12	Describe and perform procedures of a complete ultrasound examination of the bowel, lymph nodes, retroperitoneum, and peritoneal cavity from preparation to reporting.
18.0	Apply knowledge of the anatomy and scanning techniques related to superficial structures–The student will be able to:	
	18.01	Identify gross superficial structures as demonstrated by ultrasound including but not limited to: the thyroid, scrotum (testicular), abdominal wall, neck, breast, prostate and musculoskeletal.
	18.02	Identify superficial structures in two planes.
	18.03	Explain the physiology of the superficial structures and the related laboratory results.
	18.04	Explain and demonstrate the protocol for the sonographic examination of superficial structures.
	18.05	Explain the common pathology related to the superficial structures including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
	18.06	Describe and perform procedures of a complete ultrasound examination of each of the superficial structures from preparation to reporting.
19.0	Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands–The student will be able to:	

	19.01	Identify the gross structures of the urinary system as demonstrated by ultrasound including but not limited to the kidney, ureters and urinary bladder.
	19.02	Identify the gross organs of the urinary system in two planes.
	19.03	Identify the gross adrenals in two planes.
	19.04	Explain the physiology of the urinary system organs and the related laboratory results.
	19.05	Explain the physiology of the adrenals and the related laboratory results.
	19.06	Explain and demonstrate the protocol for sonographic examination of the urinary system organs.
	19.07	Explain and demonstrate the protocol for sonographic examination of the adrenals.
	19.08	Explain the common pathologies related to the urinary system organs including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	19.09	Explain the common pathologies related to the adrenals including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	19.10	Explain screen orientation and its relationship to the urinary system structures and the adrenals.
	19.11	Describe and perform procedures of a complete ultrasound examination of the urinary system from preparation to reporting.
	19.12	Describe and perform procedures of a complete ultrasound examination of the adrenals from preparation to reporting.
20.0	Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis–The student will be able to:	
	20.01	Identify the gross female pelvic structures as demonstrated by ultrasound including but not limited to the female reproductive organs and urinary bladder.
	20.02	Identify the gross female pelvic organs in two planes.
	20.03	Explain the physiology of the female pelvic organs and the related laboratory results.
	20.04	Explain and demonstrate the protocol for sonographic examination of the female pelvic organs.
	20.05	Explain the common pathologies related to the female pelvis including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	20.06	Explain screen orientation and its relationship to the female pelvic structures.
	20.07	Describe and perform procedures of a complete ultrasound examination of the female pelvis from preparation to reporting.
	20.08	Explain the protocol for both transabdominal and transvaginal pelvic ultrasound.
21.0	Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics–The student will be able to:	
	21.01	Identify gross obstetrical structures as demonstrated by ultrasound including but not limited to the uterus and adnexa in both the

		pregnant and postpartum state.
	21.02	Discuss anatomy and physiology of the various stages of fetal development as related to ultrasound.
	21.03	Discuss anatomy and physiology of the placenta at all stages of development.
	21.04	Describe the basic stages of embryology and sonographic relationships.
	21.05	Describe events occurring in the first trimester and their relationship to ultrasound.
	21.06	Explain the physiology of organs related to obstetrics.
	21.07	Explain and demonstrate the protocol for sonographic examinations used in obstetrics.
	21.08	Explain the common pathologies related to obstetrics including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	21.09	Explain screen orientation and its relationship to the organs related to obstetrics.
	21.10	Describe methods for determining gestational age and fetal growth by ultrasound using appropriate biometrics.
	21.11	Explain the effects of specific diseases common to the gestational period.
	21.12	Compare normal and abnormal states of embryology in the human as demonstrated by ultrasound.
	21.13	Perform a biophysical profile to determine fetal well-being.
	21.14	Compare the normal and pathologic appearance of the fetus and the fetal environment.
	21.15	Demonstrate special techniques of ultrasound scanning and collateral processes during pregnancy.
	21.16	Explain the protocol and AIUM guidelines for obstetrical ultrasound.
	21.17	Explain and demonstrate the special safety precautions required during an obstetrical ultrasound with a focus on AIUM guidelines.
	21.18	Describe and perform procedures of a complete obstetrical ultrasound examination from preparation to reporting.
22.0	Develop a continuous awareness of the disease processes–The student will be able to:	
	22.01	Discuss basic concepts of the causes of disease.
	22.02	Discuss common urogenital pathology.
	22.03	Discuss gastrointestinal diseases.
	22.04	Discuss common pathology found in obstetrics and gynocology.

	22.05	Discuss common pathology found in the cardiovascular system.
	22.06	Discuss common pathology found in hepatobiliary system to include: liver, gallbladder, pancreas and spleen.
	22.07	Discuss post-surgical changes and its effects on images.
23.0	**Apply accumulated knowledge to the process of creating diagnostic sonograms–The student will be able to:**	
	23.01	Complete in all aspects a diagnostic sonogram with emphasis on:
		23.01.01 patient identification
		23.01.02 patient interaction
		23.01.03 professionalism
		23.01.04 creation of an optimized sonogram
		23.01.05 appropriate image annotation
		23.01.06 safety
		23.01.07 recognition of anatomy, both normal and pathologic.
	23.02	Complete routine documentation associated with a typical ultrasound department.
	23.03	Present a sonographic exam to the interpreting physician in completed form.
24.0	**Apply skills needed to complete diagnostic images of high quality from a variety of scanning units–The student will be able to:**	
	24.01	Perform complete and diagnostic examinations of the abdomen, superficial structures, pelvis and obstetrical patient using real-time and Doppler techniques using a variety of ultrasound machines.
	24.02	Present completed examinations in detail with justification of all techniques, methods and procedures used to obtain data.
	24.03	Identify gross pathology of the abdomen, pelvis and obstetrical patient, both on sonograms and related imaging modalities.
	24.04	Perform all preliminary procedures leading to actual examination by Sonography and all procedures necessary post examination.
	24.05	Demonstrate skills needed to relate with tact and diplomacy with patients, physicians, nurses, other imaging personnel and the general hospital population.
	24.06	Demonstrate those characteristics that reflect the high degree of professionalism associated with the field of ultrasound.

Additional Information

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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.

The program should meet the requirements of:

> Commission on Accreditation of Allied Health Education Programs (CAAHEP)
> 361 Park St.
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> www.caahep.org

Written clinical affiliation agreements must be maintained with each health care facility. Health care facilities must be accredited by The Joint Commission.

The designation of PSV-C requires that the student have an associate degree in a related field of study (i.e. radiologic technology, nursing-RN, etc.). Upon the successful completion of the program the student will receive a Diagnostic Medical Sonography Specialist Certificate.

Students completing this program may apply to take one or both of the national registry examinations to obtain certification, for further information contact:

> American Registry of Diagnostic
> Medical Sonographers (ARDMS)
> 51 Monroe St. Plaza East 1
> Rockville, Maryland 20850-2400
> (301) 738-8401
> www.ardms.org

Or

American Registry of Radiologic Technologists (ARRT)
1255 Northland Drive
St. Paul, MN 55120-1155
(612) 687-0048
www.arrt.org

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Diagnostic Medical Sonography Specialist (NEW)**
Career Cluster: **Health Science**

CCC	
CIP Number	0351091005
Program Type	College Credit Certificate (CCC)
Program Length	47 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2032 Diagnostic Medical Sonographers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

<u>Purpose</u>

This certificate program is part of the Diagnostic Medical Sonography Technology AS degree program (1351091004).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as diagnostic medical sonographers, SOC Code 29-2032, or to provide supplemental training for persons previously or currently employed in this occupation.

The content includes but is not limited to anatomy, physiology and pathology of the abdominal, pelvic, and urogenital structures; physics; instrumentation; equipment standards; biological effect of ultrasound; patient care; clinical medicine; applications and limitations of ultra-sound; related diagnostic procedures; image evaluation; administration; first aid and cardiopulmonary resuscitation; employability skills; leadership and human relations skills; health and safety.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care.
13.0   Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis.
14.0   Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound
15.0   Demonstrate knowledge of the principles of Doppler.
16.0   Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting.
17.0   Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems.
18.0   Apply knowledge of the anatomy and scanning techniques related to superficial structures.
19.0   Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands.
20.0   Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis.
21.0   Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics.
22.0   Develop a continuous awareness of the disease processes.
23.0   Apply accumulated knowledge to the process of creating diagnostic sonograms.
24.0   Apply skills needed to complete diagnostic images of high quality from a variety of scanning units.

Florida Department of Education
Student Performance Standards

Program Title: **Diagnostic Medical Sonography Specialist**
CIP Number: **0351091005**
Program Length: **47 credit hours**
SOC Code(s): **29-2032**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Diagnostic Medical Sonography Technology (New) AS degree program (1351091004). At the completion of this program, the student will be able to:
Diagnostic Medical Sonography Specialist: The intended outcomes complete the occupational completion point of Diagnostic Medical Sonography Specialist.
12.0 Demonstrate an understanding of the role and responsibilities of the sonographer in regards to ultrasound imaging and patient care –The student will be able to:
12.01 Explain the role of the sonographer.
12.02 Describe the relationship of ultrasound to other imaging modalities.
12.03 Describe and explain the proper uses of orientation and standard labeling of ultrasound images.
12.04 Explain the basic concepts of ultrasound equipment available and demonstrate safety in their use and basic techniques of scanning.
12.05 Explain and demonstrate the criteria for image evaluation and specifically of special sonographic parameters.
12.06 Demonstrate proper body mechanics to avoid Work Related Musculoskeletal Disorders when performing sonographic examinations.
12.07 Describe special problems encountered and methods related to medical ethics and law in Sonography.
12.08 Describe the organizational structure common to most hospitals with special emphasis placed on the role of the ultrasound department.

	12.09	Describe the relationship of the sonographer to the patients and their special needs.
	12.10	Demonstrate professional communication skills required on a daily basis in the health care setting.
	12.11	Explain and demonstrate the methods of patient preparation and care before and during a sonogram.
	12.12	Demonstrate proper body mechanics when transporting and assisting patients.
	12.13	Discuss current trends in sonographic technology and techniques.
13.0	Demonstrate an awareness of the basic principles of ultrasound physics, emphasizing practical relationships of physics to optimizing images for more accurate diagnosis–The student will be able to:	
	13.01	Explain what sound is and its characteristics.
	13.02	Compare the difference between pulsed and continuous wave ultrasound.
	13.03	Explain amplitude and intensity of sound as it applies to Sonography.
	13.04	Describe the causes and effects of attenuation and acoustic impedance on ultrasound.
	13.05	Identify the causes and effects of incidence, scattering and refraction of ultrasound.
	13.06	Explain the Doppler Effect as it relates to ultrasound.
	13.07	Describe the factors of attenuation versus depth penetration of ultrasound in human tissue.
	13.08	Identify resolution and controlling factors of resolution as applied to Sonography.
	13.09	Discuss and demonstrate the basic principles governing sound and sound interaction in various types of tissue.
	13.10	Describe and demonstrate the conditions affecting sound transmission such as attenuating factors.
	13.11	Relate mathematical formulas to the interaction of sound with various mediums.
	13.12	Describe resolution and its effect on the final image.
	13.13	Describe and demonstrate the factors that control and determine axial, elevational and lateral resolution.
14.0	Demonstrate knowledge of the basic principles of instrumentation common to the field of ultrasound–The student will be able to:	
	14.01	Describe piezoelectric effects.
	14.02	Describe transducer construction.
	14.03	Discuss historical perspectives related to the development of the ultrasound system.

	14.04	Explain and describe how signal processing affects image production and presentations.
	14.05	Discuss basic system operation in the form of block diagrams for real-time and Doppler image production.
	14.06	Describe the purpose and use of typical controls located on ultrasound systems.
	14.07	Identify methods of determining and assuring quality control both sonographically and photographically.
	14.08	Discuss common processing techniques including but not limited to harmonics, persistence, spatial compounding, panoramic imaging, and RES.
	14.09	Discuss causes, detection and control of factors that may create biologic effects in human tissue with insonation at the diagnostic medical sonography exposure level.
15.0	Demonstrate knowledge of the principles of Doppler –The student will be able to:	
	15.01	Explain the general principles of Doppler techniques and the Doppler formula.
	15.02	Describe how pulse wave Doppler is processed and displayed.
	15.03	Describe how color-flow Doppler is processed and displayed.
	15.04	Describe how power Doppler is processed and displayed.
	15.05	Identify normal and abnormal Doppler wave forms.
	15.06	Discuss the advantages and disadvantages of the various Doppler methods.
	15.07	Describe the purpose and use of typical controls used to optimize Doppler acquisition and display.
	15.08	Demonstrate skills required on a daily basis in the typical Sonography setting for obtaining and displaying Doppler.
16.0	Apply knowledge gained in instrumentation lecture as it applied to various ultrasound systems in the clinical setting–The student will be able to:	
	16.01	Utilize patient information systems.
	16.02	Demonstrate appropriate transducer selection for specific sonographic application.
	16.03	Utilize amplification in all its forms to produce a diagnostic quality sonogram.
	16.04	Utilize power to produce a diagnostic quality sonogram while maintaining the ALARA principle.
	16.05	Utilize the various forms of processing to produce a diagnostic quality sonogram.
	16.06	Utilize the various types of scanning techniques and patient positioning required to produce diagnostic quality sonograms.
	16.07	To explain and recognize typical artifacts as found in sonographic imaging.

	16.08	Utilize test objects and phantoms.
17.0	Apply knowledge of the anatomy and scanning techniques related to retroperitoneal structures and upper abdominal organs and systems–The student will be able to:	
	17.01	Identify gross abdominal structures as demonstrated by ultrasound such as: the liver, gall bladder, aorta, inferior vena cava, stomach, pancreas, bowel, spleen, lymph nodes, retroperitoneum, and peritoneal cavity.
	17.02	Identify the gross upper abdominal organs in two planes.
	17.03	Identify the gross retroperitoneal organs, bowel and peritoneum in two planes.
	17.04	Explain the physiology of the upper abdominal organs and the related laboratory results.
	17.05	Explain the physiology of the retroperitoneal organs, bowel and peritoneum.
	17.06	Explain and demonstrate the protocol for sonographic examination of the upper abdominal organs.
	17.07	Explain and demonstrate the protocol for sonographic examination of the retroperitoneal organs, bowel and peritoneum.
	17.08	Explain the common pathologies related to the upper abdomen including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	17.09	Explain the common pathologies related to the retroperitoneal organs, bowel and peritoneum including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
	17.10	Explain screen orientation and its relationship to the upper abdomen and retroperitoneal structures.
	17.11	Describe and perform procedures of a complete ultrasound examination of the upper abdomen from preparation to reporting.
	17.12	Describe and perform procedures of a complete ultrasound examination of the bowel, lymph nodes, retroperitoneum, and peritoneal cavity from preparation to reporting.
18.0	Apply knowledge of the anatomy and scanning techniques related to superficial structures–The student will be able to:	
	18.01	Identify gross superficial structures as demonstrated by ultrasound including but not limited to: the thyroid, scrotum (testicular), abdominal wall, neck, breast, prostate and musculoskeletal.
	18.02	Identify superficial structures in two planes.
	18.03	Explain the physiology of the superficial structures and the related laboratory results.
	18.04	Explain and demonstrate the protocol for the sonographic examination of superficial structures.
	18.05	Explain the common pathology related to the superficial structures including the sonographic appearance of these pathologies and corresponding lab values, patient history and symptoms.
	18.06	Describe and perform procedures of a complete ultrasound examination of each of the superficial structures from preparation to reporting.
19.0	Apply knowledge of anatomy, pathology, and scanning techniques to the urinary system and adrenal glands–The student will be able to:	

	19.01	Identify the gross structures of the urinary system as demonstrated by ultrasound including but not limited to the kidney, ureters and urinary bladder.
	19.02	Identify the gross organs of the urinary system in two planes.
	19.03	Identify the gross adrenals in two planes.
	19.04	Explain the physiology of the urinary system organs and the related laboratory results.
	19.05	Explain the physiology of the adrenals and the related laboratory results.
	19.06	Explain and demonstrate the protocol for sonographic examination of the urinary system organs.
	19.07	Explain and demonstrate the protocol for sonographic examination of the adrenals.
	19.08	Explain the common pathologies related to the urinary system organs including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	19.09	Explain the common pathologies related to the adrenals including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	19.10	Explain screen orientation and its relationship to the urinary system structures and the adrenals.
	19.11	Describe and perform procedures of a complete ultrasound examination of the urinary system from preparation to reporting.
	19.12	Describe and perform procedures of a complete ultrasound examination of the adrenals from preparation to reporting.
20.0	Apply knowledge of anatomy, pathology, and scanning techniques used in Sonography of the female pelvis–The student will be able to:	
	20.01	Identify the gross female pelvic structures as demonstrated by ultrasound including but not limited to the female reproductive organs and urinary bladder.
	20.02	Identify the gross female pelvic organs in two planes.
	20.03	Explain the physiology of the female pelvic organs and the related laboratory results.
	20.04	Explain and demonstrate the protocol for sonographic examination of the female pelvic organs.
	20.05	Explain the common pathologies related to the female pelvis including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	20.06	Explain screen orientation and its relationship to the female pelvic structures.
	20.07	Describe and perform procedures of a complete ultrasound examination of the female pelvis from preparation to reporting.
	20.08	Explain the protocol for both transabdominal and transvaginal pelvic ultrasound.
21.0	Apply knowledge of anatomy, pathology and scanning techniques related to obstetrics–The student will be able to:	
	21.01	Identify gross obstetrical structures as demonstrated by ultrasound including but not limited to the uterus and adnexa in both the

		pregnant and postpartum state.
	21.02	Discuss anatomy and physiology of the various stages of fetal development as related to ultrasound.
	21.03	Discuss anatomy and physiology of the placenta at all stages of development.
	21.04	Describe the basic stages of embryology and sonographic relationships.
	21.05	Describe events occurring in the first trimester and their relationship to ultrasound.
	21.06	Explain the physiology of organs related to obstetrics.
	21.07	Explain and demonstrate the protocol for sonographic examinations used in obstetrics.
	21.08	Explain the common pathologies related to obstetrics including the sonographic appearance of these pathologies corresponding lab values, patient history and symptoms.
	21.09	Explain screen orientation and its relationship to the organs related to obstetrics.
	21.10	Describe methods for determining gestational age and fetal growth by ultrasound using appropriate biometrics.
	21.11	Explain the effects of specific diseases common to the gestational period.
	21.12	Compare normal and abnormal states of embryology in the human as demonstrated by ultrasound.
	21.13	Perform a biophysical profile to determine fetal well-being.
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	21.17	Explain and demonstrate the special safety precautions required during an obstetrical ultrasound with a focus on AIUM guidelines.
	21.18	Describe and perform procedures of a complete obstetrical ultrasound examination from preparation to reporting.
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	22.01	Discuss basic concepts of the causes of disease.
	22.02	Discuss common urogenital pathology.
	22.03	Discuss gastrointestinal diseases.
	22.04	Discuss common pathology found in obstetrics and gynocology.

	22.05	Discuss common pathology found in the cardiovascular system.
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	24.03	Identify gross pathology of the abdomen, pelvis and obstetrical patient, both on sonograms and related imaging modalities.
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	24.05	Demonstrate skills needed to relate with tact and diplomacy with patients, physicians, nurses, other imaging personnel and the general hospital population.
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Additional Information

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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.

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Written clinical affiliation agreements must be maintained with each health care facility. Health care facilities must be accredited by The Joint Commission.

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American Registry of Diagnostic
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Or

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St. Paul, MN 55120-1155
(612) 687-0048
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Florida Department of Education
Curriculum Framework

Program Title: **Endoscopic Technician**
Career Cluster: **Health Science**

CCC	
CIP Number	0351099902
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Health Sciences AS degree program (1351000002).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The program is designed to prepare students for employment as an Endoscopic Technician (SOC31-9099).

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, anatomy, physiology, pathophysiology, microbiology, aseptic techniques, patient care endoscopy procedures, endoscopy procedures, patient safety, use and care of equipment and supplies, CPR, Heartsaver, employability skills, basic computer literacy and endoscopic technician duties such as disinfection and processing endoscopic instruments, completing the setup and assisting during the endoscopy procedures, assisting with patient positioning and splinting as indicated, transportation of patients, and manage the endoscopy accessories, related supplies and equipment.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Demonstrate language arts knowledge and skills.
13.0   Solve problems using critical thinking skills, creativity and innovation.
14.0   Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.
15.0   Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
16.0   Demonstrate Central Supply Technician Skills.
17.0   Demonstrate competencies in the core components of the endoscopy technician communication and interpersonal skills.
18.0   Demonstrate an understanding of the basic sciences related to endoscopy.
19.0   Describe and practice safety measures in the endoscopy environment.
20.0   Perform patient care endoscopy procedures related to the endoscopy environment and describe methods for meeting patients' needs.
21.0   Demonstrate knowledge of the basic endoscopy skills necessary to function safely and effectively.
22.0   Demonstrate competencies in the core components of the endoscopy technician knowledge and skills.
23.0   Demonstrate competencies in the core components of the endoscopy technician legal and ethical responsibilities.

Florida Department of Education
Student Performance Standards

Program Title: **Endoscopic Technician**
CIP Number: **0351099902**
Program Length: **24 credit hours**
SOC Code(s):   **31-9099**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of Health Sciences AS degree program (1351000002). At the completion of this program, the student will be able to:
Students completing intended outcomes 12-23, in addition to the health careers core, will meet the requirements of the Endoscopic Technician-CCC (SOC Code 31-9099).
12.0   Demonstrate language arts knowledge and skills – The students will be able to:
12.01   Locate, comprehend and evaluate key elements of oral and written information.
12.02   Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
12.03   Present information formally and informally for specific purposes and audiences.
13.0   Solve problems using critical thinking skills, creativity and innovation – The students will be able to:
13.01   Employ critical thinking skills independently and in teams to solve problems and make decisions.
13.02   Employ critical thinking and interpersonal skills to resolve conflicts.
13.03   Identify and document workplace performance goals and monitor progress toward those goals.
13.04   Conduct technical research to gather information necessary for decision-making.

14.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment – The students will be able to:	
	14.01	Describe the nature and types of business organizations.
	14.02	Explain the effect of key organizational systems on performance and quality.
	14.03	List and describe quality control systems and/or practices common to the workplace.
	14.04	Explain the impact of the global economy on business organizations.
15.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The students will be able to:	
	15.01	Employ leadership skills to accomplish organizational goals and objectives.
	15.02	Establish and maintain effective working relationships with others, in order to accomplish objectives and tasks.
	15.03	Conduct and participate in meetings to accomplish work tasks.
	15.04	Employ mentoring skills to inspire and teach others.
	15.05	Analyze attributes and attitudes of an effective leader.
	15.06	Recognize factors and situations that may lead to conflict. .
	15.07	Demonstrate effective techniques for managing team conflict.
16.0	Demonstrate Central Supply Technician Skills The student will be able to:	
	16.01	Apply the principles of medical/endoscopy asepsis
	16.02	Apply infection control techniques following Center for Disease Control (CDC) guidelines.
	16.03	Inspect equipment and supplies for condition and quantity
	16.04	Identify principles and demonstrate techniques of disinfection and sterilization.
	16.05	Identify/correct and/or report package integrity.
	16.06	Decontaminate instruments equipment and environment.
	16.07	Replenish supplies and equipment.
	16.08	Identify instruments, equipment and supplies for any procedure.
	16.09	Demonstrate the ability to package goods and supplies as required.

	16.10	Describe various supply distribution methods.
	16.11	Demonstrate ability to label items correctly.
	16.12	Discuss and use various inventory control systems.
17.0	Demonstrate Competencies in the Core Components of the Endoscopy Technician - Communication And Interpersonal Skills -- The student will be able to:	
	17.01	Use various forms of communication in the role of Endoscopy Technician to communicate relevant, accurate and complete information in a concise and clear manner.
	17.02	Collaborate with the patient, physician, and other members of the Healthcare team to assess, plan, implement, and evaluate the patient's endoscopy care to promote positive outcomes.
	17.03	Demonstrate proper use of communication technology including but not limited to intercoms, computers, paging systems.
	17.04	Demonstrate patient interviewing techniques.
	17.05	Facilitate teamwork as a patient advocate and assistant to the physician.
	17.06	Demonstrate competency regarding reporting and documentation responsibilities.
18.0	Demonstrate An Understanding Of The Basic Sciences Related To Endoscopy--The student will be able to:	
	18.01	Apply knowledge of the microbial environment to the care of the patient.
	18.02	Relate anatomy, physiology and pathophysiology, to endoscopy procedures.
	18.03	Apply the principles of medical and surgical asepsis to endoscopy procedures performed.
	18.04	Discuss electricity, computers, and robotics as they relate to endoscopy procedures performed.
	18.05	Apply knowledge of the pharmacologic agents used in the treatment of the endoscopy patient.
19.0	Describe And Practice Safety Measures In The Endoscopy Environment--The student will be able to:	
	19.01	Inspect emergency equipment and supplies for condition and quantity.
	19.02	Implement appropriate Joint Commission patient safety goals.
	19.03	Apply knowledge of endoscopy hazards to safe patient care.
20.0	Perform Patient Care Endoscopy Procedures Related To The Endoscopy Environment And Describe Methods For Meeting Patient's Needs--The student will be able to:	
	20.01	Perform safe patient transfer/transportation techniques used in the endoscopy unit setting.
	20.02	Apply the principles of safe positioning and restraining patient for endoscopy procedures.

	20.03	Apply the principles of safe usage of the electrosurgical unit, laser, endoscopes, and other equipment utilized.
	20.04	Identify the roles of the members of the endoscopy team during each phase of endoscopy procedures.
	20.05	Assist the registered nurse and physician with the care of the endoscopy patient.
	20.06	Identify the principles of patient assessment and preparation, techniques and methods of anesthesia related to the type of endoscopy procedure and principles of postoperative anesthetic management
	20.07	Apply knowledge of endoscopy assisting techniques such as splinting and assisting with specimens.
21.0	Demonstrate Knowledge Of The Basic Endoscopy Skills Necessary To Function Safely And Effectively--The student will be able to:	
	21.01	Demonstrate an understanding of the gastrointestinal and respiratory system and disease processes.
	21.02	Select instruments, equipment and supplies for endoscopy procedures using physician preference/procedure cards.
	21.03	Measure and pour sterile solutions.
	21.04	Put on sterile gloves.
	21.05	Assist in draping patient, pass instruments, monitor field.
	21.06	Identify principles and demonstrate techniques of disinfection and sterilization.
	21.07	Decontaminate instruments equipment and environment.
	21.08	Prepare and/or update procedure cards.
	21.09	Apply electrical knowledge to safe patient care practices in endoscopy procedures.
22.0	Demonstrate Competencies In The Core Components of the Endoscopy Technician - Knowledge and Skills -- The student will be able to:	
	22.01	Prioritize care or actions to be taken in a given circumstance to expedite the procedure or emergency situation.
	22.02	Describe preoperative diagnosis, common complications, and operative pathophysiology related to the specific endoscopy procedures performed.
	22.03	Describe common patient diagnostic and monitoring devices as applicable to the endoscopy specialty.
	22.04	Assist physician and/or healthcare team with preoperative preparation of the patient to facilitate proper patient care including but not limited to positioning, draping, and setup preparation.
	22.05	Identify gross anatomical structures correctly during endoscopy procedures.
	22.06	Demonstrate appropriate tissue handling techniques including the care of the endoscopy specimens.
	22.07	Describe the appropriate sequence for common endoscopy procedures.

	22.08	Utilize appropriate techniques to assist with facilitating visualization.
	22.09	Demonstrate appropriate safe endoscopy techniques when the case involves either thermal, radiological, laparoscopic, environmental, or other known endoscopy hazard.
	22.10	Select appropriate instruments and supplies for the procedure.
	22.11	Demonstrate competence with technology, the use of instruments, equipment and supplies for the endoscopy procedure.
	22.12	Assist the registered nurse and physician with postoperative care of the patient to facilitate proper patient care.
	22.13	Demonstrate appropriate response to emergency situations including respiratory/cardiac arrest situations, sudden hypoxia, hemorrhage, shock, endoscopy misadventures, contamination, perforation of viscous or cavity, critical equipment failure, and injury.
	22.14	Facilitate the continuity of care within the healthcare setting to access available resources and services.
23.0	Demonstrate Competencies In The Core Components Of The Endoscopy Technician - Legal And Ethical Responsibilities --The student will be able to:	
	23.01	State methods, standards and aids that assist an Endoscopy Technician with interpreting and following legal responsibilities.
	23.02	Explain the job requirements.
	23.03	Demonstrate an understanding of the legal, ethical, moral, and professional responsibilities of working as an endoscopy technician, and the professional skills necessary to fulfill the role.
	23.04	Provide health care within the ethical/legal framework of the job description including role responsibilities and limitations.

<div align="center">**Additional Information**</div>

Laboratory Activities

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

The Human Patient Simulator (HPS) or other accepted simulation scenarios may be used for a limited number of clinical hours. A low teacher-student ratio in the lab and clinical area is strongly recommended. The recommended maximum ratio is 1:8.

Special Notes

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program meets the Department of Health 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

The Endoscopy Technician Core Curriculum should be taught by qualified staff including but not limited to physicians, registered nurses, certified endoscopic technicians and experienced endoscopic technicians.

Entering students who have successfully completed the program 51-3902, Nursing Assistant or currently Nationally Certified as a CNA (Certified Nursing Assistant), should be given appropriate advanced standing.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title:	Medical Clinical Laboratory Technician-ATD
Program Type:	ATD (Applied Technology Diploma)
Career Cluster:	Health Science

	CC	PSAV
Program Number	N/A	H170600
CIP Number	0351100401	0351100404
Grade Level	Applied Technology Diploma (ATD)	30, 31
Standard Length	40 credit hours	1515 clock hours
CTSO	HOSA: Future Health Professionals	
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other 31-9097 Phlebotomists 29-2012 Medical and Clinical Laboratory Technicians	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level:	Mathematics 10 Reading: 11 Language: 11	

Purpose

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

The content includes but is not limited to didactic and laboratory performance of routine procedures in hematology, immunology, urinalysis, immunohematology, microbiology and clinical chemistry including the use of common laboratory instruments. A clinical component is a necessary element of this program.

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

Program Structure

This program is an Applied Technology Diploma (ATD) program that is part of a technical degree program, is less than 60 credit hours, and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit. A public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college.

PSAV Program

When offered at the district level, this program is a planned sequence of instruction consisting of 3 occupational completion points and the courses as shown below.

OCP	Course Number	Course Title	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	90 hours	31-9099
B	MEA0520	Phlebotomist	75 hours	31-9097
C	MLT0009	Introduction to Medical laboratory Technology	90 hours	29-2012
	MLT0220	Urinalysis and Body Fluids	135 hours	
	MLT0335	Hematology and Hemostasis	280 hours	
	MLT0505	Immunology	60 hours	
	MLT0640	Clinical Chemistry	255 hours	
	MLT0520	Immunohematology	255 hours	
	MLT0450	Microbiology and Parasitology	275 hours	

College Credit

When offered at the college level, this ATD program is part of the Medical Laboratory Technology AS program (1351100405) and has a program length of 40 credits.

Standards

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

01.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Demonstrate accepted professional, communication and interpersonal skills.
13.0   Discuss phlebotomy in relation to the health care setting.
14.0   Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist.
15.0   Recognize and identify collection reagents supplies, equipment and interfering chemical substances.
16.0   Demonstrate skills and knowledge necessary to perform phlebotomy.
17.0   Practice infection control following standard precautions.
18.0   Practice accepted procedures of transporting, accessioning and processing specimens.
19.0   Practice quality assurance and safety.
20.0   Demonstrate knowledge and use of basic laboratory equipment and techniques.
21.0   Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived).
22.0   Demonstrate basic knowledge of and perform Point of Care (POC) Testing using CLIA approved Waived instrumentation.
23.0   Discuss the general responsibilities and functions encountered by a medical technician.
24.0   Apply quality assurance principles and safety protocols.
25.0   Demonstrate knowledge of the operation of computer systems.
26.0   Demonstrate an understanding of the basic principles of molecular diagnostics.
27.0   Demonstrate knowledge of urinalysis and body fluids principles and procedures.
28.0   Demonstrate knowledge of hematological principles and procedures.
29.0   Demonstrate knowledge of hemostasis and related diagnostic principles and procedures.
30.0   Demonstrate knowledge of immunology principles and procedures.
31.0   Demonstrate knowledge of clinical chemistry principles and procedures.
32.0   Demonstrate knowledge of immunohematology principles and procedures.
33.0   Demonstrate knowledge of microbiological principles and procedures.

Florida Department of Education
Student Performance Standards

Program Title: Medical Clinical Laboratory Technician-ATD
PSAV Number: H170600

When this program is offered at the PSAV 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 PSAV health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

PSAV Course Number: HSC0003
Occupational Completion Point: A
Basic Healthcare Worker – 90 Hours – SOC Code 31-9099

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

PSAV Course Number: MEA0520
Occupational Completion Point: B
Phlebotomist – 75 Hours – SOC Code 31-9097

12.0	Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01	Demonstrate the appropriate professional behavior of a phlebotomist.
12.02	Explain to the patient the procedure to be used in specimen collection.
12.03	Explain in detail the importance of identifying patients correctly when drawing blood.
12.04	Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05	List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
12.06	Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0	Discuss phlebotomy in relation to the health care setting. – The student will be able to:

	13.01	List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.
	13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
	13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	**Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:**	
	14.01	Describe and define major body systems with emphasis on the circulatory system.
	14.02	List and describe the main superficial veins used in performing venipuncture.
	14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
	14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
	14.05	Compare and contrast between serum and plasma as it relates to blood collection.
	14.06	Discuss hemostasis as it relates to blood collection.
15.0	**Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:**	
	15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
	15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
	15.03	Identify and discuss proper use of supplies used in collecting micro-specimens.
	15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
	15.05	Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
	15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
	15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	**Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:**	
	16.01	Follow approved procedure for completing a laboratory requisition form.
	16.02	Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.
	16.03	Demonstrate knowledge of established protocol for patient and specimen identification in the Physician Office Laboratory (POL).

	16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.
	16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
	16.06	Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.
	16.07	Describe the correct order of draw.
	16.08	Describe the use of barcoding systems used for specimen collection.
	16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
	16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
	16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.
	16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
	16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
	16.14	Demonstrate the proper procedure for collecting blood cultures.
	16.15	Discuss the effects of hemolysis and methods of prevention.
	16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:	
	17.01	Define the term "nosocomial/ hospital acquired infection."
	17.02	Describe and practice procedures for infection prevention including hand washing skills.
	17.03	Discuss and perform transmission based precautions.
	17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:	
	18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool , and wound culture specimens.
	18.02	Demonstrate knowledge of accessioning procedures.
	18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
	18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.

19.0	Practice quality assurance and safety. – The student will be able to:	
	19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.
	19.02	Demonstrate knowledge of and practice appropriate patient safety.
	19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.
	19.04	Follow documentation procedures for work related accidents.
	19.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.

PSAV Course Number: MLT0009
Occupational Completion Point: C
Introduction to Medical Laboratory Technology – 90 Hours – SOC Code 29-2012

20.0	Demonstrate knowledge and use of basic laboratory equipment and techniques. –The student will be able to:	
	20.01	Identify the parts of the microscope and explain the function of each.
	20.02	Demonstrate the proper technique for operation of the microscope.
	20.03	Demonstrate use of standard laboratory equipment including glassware, pipettes and centrifuge.
	20.04	Perform basic laboratory math calculations.
	20.05	Apply principles of quality assurance to correct problems encountered in monitoring daily quality control.
	20.06	Evaluate laboratory findings and take necessary action to confirm or clarify results according to standard operation and procedure.
	20.07	Demonstrate knowledge of operation and principles of laboratory instruments.
21.0	Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived)- The student will be able to	
	21.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:
	21.04.01	Test principle
	21.04.01	Storage & Stability
	21.04.01	Internal vs. External Quality Control
	21.04.01	Specimen collection & preparation

		21.04.01	Directions for use
		21.04.01	Interpretation of results
		21.04.01	Interfering substances
	21.02	Demonstrate and discuss knowledge of lot numbers use and importance in regard to both kits and reagents.	
	21.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.	
	21.04	Explain the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.	
22.0	Demonstrate basic knowledge of and perform Point of Care(POC) Testing using CLIA approved Waived instrumentation- The student will be able to		
	22.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.	
	22.02	Demonstrate competence in instrument maintenance.	
	22.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.	
	22.04	Identify normal limits and associate abnormal results with disease or disorders.	
	22.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.	
23.0	Discuss the general responsibilities and functions encountered by a medical technician–The students will be able to:		
	23.01	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.	
	23.02	Organize and communicate the results obtained by observation and experimentation.	
	23.03	Demonstrate ability to evaluate and draw conclusions.	
	23.04	Demonstrate ability to report observations in written or oral form.	
	23.05	Discuss the licensure and certification requirements of the major classifications of clinical laboratory personnel.	
24.0	Apply quality assurance principles and safety protocols–The student will be able to:		
	24.01	Recognize specimen suitability and determine need for rejection/recollection using factors described in clinical protocol.	
	24.02	Describe special procedures for transporting and processing specimens.	
	24.03	Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance of equipment.	
	24.04	Demonstrate required calibration procedures.	

24.05	Demonstrate and record quality control procedures required for the tests performed and recognize unacceptable results.
24.06	Report identified problems encountered in daily quality control according to standard operating procedures.
24.07	Comply with current OSHA regulations regarding laboratory hazards.
25.0	**Demonstrate knowledge of the operation of computer systems–The student will be able to:**
25.01	Discuss the role of computer systems in laboratory data management.
25.02	Demonstrate knowledge of common computer terminology.
25.03	Demonstrate entry level computer operations for specimen accessioning, data reporting, and quality control recording.
25.04	Demonstrate entry level operational skills in the use of computer-interfaced analytical instrumentation.
26.0	**Demonstrate an understanding of the basic principles of molecular diagnostics–The student will be able to:**
26.01	Discuss the principles and major steps of the polymerase chain reaction (PCR).
26.02	Label the organelles and important parts of a eukaryotic animal cell.
26.03	Describe the function of the organelles and important parts of a eukaryotic animal cell.
26.04	Discuss the structure, function, and components of DNA and RNA.
26.05	Define the key terms of molecular diagnostics.
26.06	Understand the principles of molecular diagnostic testing.
26.07	Compare the advantages and disadvantages of molecular techniques over traditional diagnostic tests for infectious diseases.
26.08	List molecular tests associated with the identification of microorganisms.
26.09	Identify the types of samples appropriate for molecular diagnostics.
PSAV Course Number: MLT0220 **Occupational Completion Point: C** **Urinalysis and Body Fluids – 135 Hours – SOC Code 29-2012**
27.0	**Demonstrate knowledge of urinalysis and body fluids principles and procedures–The student will be able to:**
27.01	Identify the components of the urinary system and explain their functions.
27.02	Discuss diseases affecting the urinary system.
27.03	Describe collection, transport and storage procedures for random and timed urine specimens.

27.04	Discuss physical properties related to normal and abnormal components of the urine including related odors, color.
27.05	Discuss specific gravity techniques; calibration and use of the refractometer.
27.06	Perform dipstick or tablet (nonautomated) urinalysis techniques for chemical exam of the urine and interpret results
27.07	Demonstrate the proper use of urine strip readers.
27.08	Describe renal function tests.
27.09	Describe principles of and perform routine physical and chemical analyses on urine.
27.10	Prepare urine sediments and perform identification and quantitation of microscopic formed elements.
27.11	Correlate abnormal physical, chemical and microscopic urine results with associated pathological conditions.
27.12	Define and discuss the differences between transudates and exudates.
27.13	Discuss miscellaneous body fluids to include cerebral spinal, seminal and joint fluids.
27.14	Perform physical, chemical and microscopic evaluations of common body fluids.

PSAV Course Number: MLT0335:
Occupational Completion Point: C
Hematology and Hemostasis – 280 Hours – SOC Code 29-2012

28.0	Demonstrate knowledge of hematological principles and procedures–The student will be able to:
28.01	Discuss the organs, cells and cellular interaction of the lymphoid, myeloid and reticuloendothelial systems.
28.02	Demonstrate an understanding of basic concepts of hematopoietic regulation, proliferation and cellular differentiation.
28.03	Identify the components of blood.
28.04	Discuss the function of formed elements of blood.
28.05	Demonstrate an understanding of the synthesis of normal and abnormal molecular structure of hemoglobin, common hemoglobinopathies and associated tests.
28.06	Describe normal hemoglobin-oxygen function using the Oxygen Dissociation Curve (ODC).
28.07	Discuss assessment and impact of preanalytical, analytical and post-analytical factors on hematology testing.
28.08	Discuss techniques of hematology related to calculation of red blood cell indices.
28.09	Discuss selected cytochemical staining and flowcytometry procedures.
28.10	Perform standard operational procedures to evaluate erythrocytes and their physical properties using patient blood and

		quality control samples.
	28.11	State the review process of histogram/scatterplot/scattergram analysis.
	28.12	Describe the categories used in a morphological classification of anemias.
	28.13	Correlate automated hemogram parameter for red cell indices with peripheral exam of blood smear.
	28.14	List the maturation sequence and identify distinguishing morphology for stages of developing white blood cells or leukocytes using stained smears, photographs, electronic images or other visual means of representation.
	28.15	Discuss normal and abnormal hematology findings, reference ranges and associated diseases.
	28.16	Demonstrate an understanding of,normal and abnormal white cell morphology, related disease states and associated tests.
	28.17	Discuss the principles of and perform routine hematology procedures applying quality control procedures.as necessary.
	28.18	Perform commonly used methods to evaluate leukocytes, correlate and verify automated cell counts with established criteria.
	28.19	Identify the criteria used to classify nonmalignant leukocytic disorders, e.g. shift to the left, toxic granulation, Döhle bodies, etc.
	28.20	Perform techniques of manual blood smear evaluation including white blood cell differential, red cell and platelet morphology.
	28.21	Correlate peripheral blood evaluation with automated cell analysis.
	28.22	Perform platelet counts on patient and control specimens using manual and automated techniques and correlate counts with peripheral smear.
29.0		Demonstrate knowledge of hemostasis and related diagnostic principles and procedures–The student will be able to:
	29.01	Discuss and define the interactive systems necessary to maintain hemostasis.
	29.02	Discuss common coagulopathies and associated treatments and therapies.
	29.03	Discuss assessment and impact of preanalytical factors on hemostasis testing
	29.04	Describe the principles of and perform routine testing used in the evaluation of the vascular, platelet, coagulation and fibrinolytic systems.
	29.05	Discuss additional hemostasis tests performed to differentiate the cause of abnormal routine tests.

PSAV Course Number: MLT0505
Occupational Completion Point: C
Immunology – 60 Hours – SOC Code 29-2012

30.0		Demonstrate knowledge of immunology principles and procedures–The student will be able to:
	30.01	Discuss the functions of the cells of the immune system, cytokines and regulatory molecules.

	30.02	Discuss physical and chemical properties of immunogens (antigens), immunoglobulins (antibodies) and complement
	30.03	Describe their roles in both *in vivo* and *in vitro* reactions.
	30.04	Compare and contrast the principles of basic agglutination, flocculation and precipitation procedures in immunology/serology.
	30.05	Perform basic procedures in immunology/serology.
	30.06	Discuss principles of, immunoelectrophoresis, immunofixationand enzyme immunoassay.
	30.07	Discuss the clinical significance of the commonly performed immunology/ tests.
	30.08	Discuss selected specialty serological tests such as immuno assays.

PSAV Course Number: MLT0640
Occupational Completion Point: C
Clinical Chemistry – 255 Hours – SOC Code 29-2012

31.0		Demonstrate knowledge of clinical chemistry principles and procedures–The student will be able to:
	31.01	Identify the chemistry analytes used to evaluate various body systems.
	31.02	Discuss the renal system and related chemistry tests.
	31.03	Discuss principles of and perform common renal function tests.
	31.04	Discuss carbohydrate, protein and lipid metabolism.
	31.05	Discuss principles of and perform commonly ordered tests related to carbohydrate, protein and lipid metabolism.
	31.06	Discuss the liver and its functions as related to chemistry tests.
	31.07	Discuss principles of and perform commonly ordered liver function tests.
	31.08	Discuss enzyme classification, origin, activity and function.
	31.09	Discuss principles of and perform commonly ordered enzyme procedures.
	31.10	Discuss electrolyte balance as related to health and disease.
	31.11	Discuss principles of and perform electrolyte analyses.
	31.12	Discuss principles of and perform commonly ordered tests to evaluate cardiac function.
	31.13	Discuss the physiology of the endocrine system and the principal tests used to evaluate endocrine function.
	31.14	Discuss the role of the laboratory in therapeutic drug monitoring and toxicology.

31.15	Discuss and perform general electrophoresis techniques.
31.16	Discuss the clinical significance of commonly ordered chemistry tests.
31.17	Demonstrate knowledge of principles of instrumentation as related to the clinical chemistry laboratory.
31.18	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.
31.19	Discuss techniques of clinical chemistry related to visual colorimetry; calibration and use of the spectrophotometer.
31.20	Discuss basic techniques of clinical chemistry related to normal and abnormal physiology.

PSAV Course Number: MLT0520
Occupational Completion Point: C
Immunohematology – 255 Hours – SOC Code 29-2012

32.0	Demonstrate knowledge of immunohematology principles and procedures–The student will be able to:
32.01	Discuss donor interview, criteria for selection, phlebotomy preparation, and donor blood processing.
32.02	Discuss blood component collection and, preparation, storage and use.
32.03	Describe the roles of FDA, AABB, and state agencies and how to contact each.
32.04	Compare advantages and disadvantages for autologous, versus homologous (allogenic) blood collection and transfusion.
32.05	Discuss basic genetics of the blood group antigens
32.06	Discuss the ABO and Rh blood group systems and differentiate by using appropriate testing procedures.
32.07	Describe required tests on recipient blood samples and recognize discrepancies of ABO typing results.
32.08	Discuss and differentiate other blood group systems such as Duffy, Kell, Kidd, S,s, Lu and the common usually cold-reacting antibodies such as Le, P, I, M and N.
32.09	Perform antigen and antibody testing to determine Rh phenotypes.
32.10	Apply properties of blood group antigens to perform and interpret antibody screening.
32.11	Perform identification tests to detect clinically significant antibodies.
32.12	Discuss the safety and determine compatibility of blood components for transfusion.
32.13	Discuss and perform routine compatibility testing including the immediate spin crossmatch and the electronic crossmatch.
32.14	Discuss and perform red cell antigen typing on recipient donor specimens.
32.15	Identify symptoms of and required laboratory protocol for handling suspected transfusion reactions.

32.16	Discuss immune hemolytic disorders and perform the direct antiglobulin test.
32.17	Discuss appropriate absorption and elution techniques.
32.18	Verify appropriate quality control (QC) on reagents.
32.19	Describe the immune process which causes hemolytic disease of the fetus and newborn.

PSAV Course Number: MLT0450
Occupational Completion Point: C
Microbiology and Parsitology – 275 Hours – SOC Code 29-2012

33.0	Demonstrate knowledge of microbiological principles and procedures–The student will be able to:
33.01	Discuss microbial taxonomy and nomenclature.
33.02	Discuss bacterial metabolism, reproduction, cell structures and their functions.
33.03	Discuss classification, composition and preparation of culture media.
33.04	Discuss the human pathogenesis of bacteria.
33.05	Discuss and perform techniques of microbiology related to sterilization techniques.
33.06	Perform culturing techniques for urine, stool, wound, throat, body fluids, blood and exudates.
33.07	Perform techniques of microbiology related to inoculation and transfer of cultures.
33.08	Discuss the principles of Gram and AFB stains.
33.09	Accurately perform, read and report gram stains.
33.10	Perform techniques necessary for isolation and identification of aerobic and anaerobic bacterial organisms.
33.11	Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
33.12	Perform and interpret antibiotic susceptibility tests.
33.13	Discuss collection and handling of specimens for fungal, mycobacterial and viral culture.
33.14	Prepare and examine specimens, and identify ova and parasites when present.

Florida Department of Education
Student Performance Standards

Program Title: **Medical Clinical Laboratory Technician-ATD**
ATD CIP Number: **0351100401**
SOC Code(s):   **31-9099, 31-9097, 29-2012**

When this program is offered at the college level, the following standards and benchmarks apply:

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

Phlebotomy: (12-19)
12.0   Demonstrate accepted professional, communication, and interpersonal skills. – The student will be able to:
12.01   Demonstrate the appropriate professional behavior of a phlebotomist.
12.02   Explain to the patient the procedure to be used in specimen collection.
12.03   Explain in detail the importance of identifying patients correctly when drawing blood.
12.04   Describe the scope of practice (job skills and duties) for a phlebotomist.
12.05   List and describe professional organizations that provide accreditation, certification, and licensure to phlebotomists and phlebotomy programs.
12.06   Explain the importance of continuing education in relation to certification to maintain competency and skills.
13.0   Discuss phlebotomy in relation to the health care setting. – The student will be able to:
13.01   List, classify and discuss various departments and services within the health care setting in which the phlebotomist must interact with to obtain laboratory specimens from patients.

	13.02	Identify the major departments/sections with the clinical laboratory, the major types of procedures run in each department/section, and their specimen requirements.
	13.03	Describe roles of the major classifications of clinical laboratory personnel (i.e., pathologist, chief/administrative technologist, CLS, MLS, MLT, MT, phlebotomist, lab assistant, etc.).
14.0	Identify the anatomic structure and function of body systems in relation to services performed by phlebotomist. – The student will be able to:	
	14.01	Describe and define major body systems with emphasis on the circulatory system.
	14.02	List and describe the main superficial veins used in performing venipuncture.
	14.03	Locate the most appropriate sites(s) for capillary and venipuncture.
	14.04	Describe the function of the following blood components: erythrocytes, thrombocytes, leukocytes and plasma.
	14.05	Compare and contrast between serum and plasma as it relates to blood collection.
	14.06	Discuss hemostasis as it relates to blood collection.
15.0	Recognize and identify collection reagents supplies, equipment and interfering chemical substances. – The student will be able to:	
	15.01	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.
	15.02	Explain the special precautions and types of equipment needed to collect blood from the pediatric patient.
	15.03	Identify and discuss proper use of supplies used in collecting micro-specimens.
	15.04	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.
	15.05	Describe the types of patient's specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
	15.06	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.
	15.07	Define and utilize correct medical terminology and metric measurement needed for specimen collection.
16.0	Demonstrate skills and knowledge necessary to perform phlebotomy. – The student will be able to:	
	16.01	Follow approved procedure for completing a laboratory requisition form.
	16.02	Recognize a properly completed requisition and apply established protocol for patient and specimen identification for transport to a reference lab.
	16.03	Demonstrate knowledge of established protocol for patient and specimen identification in the Physician Office Laboratory (POL).
	16.04	Discuss appropriate methods for facilitating and preparing the patient for capillary and venipuncture collection.

16.05	List appropriate antiseptic agents useful in preparing sites for capillary and venipuncture.
16.06	Perform venipuncture by evacuated tube, butterfly and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment and specimens, and appropriate patient care.
16.07	Describe the correct order of draw.
16.08	Describe the use of barcoding systems used for specimen collection.
16.09	Convey an understanding of capillary puncture using appropriate supplies and techniques for both adults and pediatric patients.
16.10	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.
16.11	Recognize and respond to possible adverse patient reactions such as allergies, convulsions, syncope and light headedness.
16.12	Perform appropriate procedures for disposing of used or contaminated capillary and venipuncture supplies.
16.13	Perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.
16.14	Demonstrate the proper procedure for collecting blood cultures.
16.15	Discuss the effects of hemolysis and methods of prevention.
16.16	Demonstrate a working understanding of how age and weight of patients impacts the maximum amount of blood that can be safely drawn.
17.0	Practice infection control following standard precautions. – The student will be able to:
17.01	Define the term "nosocomial/ hospital acquired infection."
17.02	Describe and practice procedures for infection prevention including hand washing skills.
17.03	Discuss and perform transmission based precautions.
17.04	Identify potential routes of infection and their complications.
18.0	Practice accepted procedures of transporting, accessioning and processing specimens. – The student will be able to:
18.01	Follow the approved procedure for preparation and processing (e.g. - centrifugation, separation, aliquoting, labeling, and storage) of serum, plasma, urine, sputum, stool , and wound culture specimens.
18.02	Demonstrate knowledge of accessioning procedures.
18.03	Describe the significance of time constraints for specimen collection, transporting and delivery.
18.04	Describe routine procedures for transporting and processing specimens including DOT packaging requirements.
19.0	Practice quality assurance and safety. – The student will be able to:

19.01	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.	
19.02	Demonstrate knowledge of and practice appropriate patient safety.	
19.03	Practice safety in accordance with OSHA (State & Federal guidelines) for chemical, biological, and PPE established procedures including proper disposal of sharps.	
19.04	Follow documentation procedures for work related accidents.	
19.05	Implement appropriate Joint Commission patient safety goals and other accrediting/regulatory agency guidelines.	
Medical Laboratory Technician: (20-33)		
20.0	Demonstrate knowledge and use of basic laboratory equipment and techniques.	
20.01	Identify the parts of the microscope and explain the function of each.	
20.02	Demonstrate the proper technique for operation of the microscope.	
20.03	Demonstrate use of standard laboratory equipment including glassware, pipettes and centrifuge.	
20.04	Perform basic laboratory math calculations.	
20.05	Apply principles of quality assurance to correct problems encountered in monitoring daily quality control.	
20.06	Evaluate laboratory findings and take necessary action to confirm or clarify results according to standard operation and procedure.	
20.07	Demonstrate knowledge of operation and principles of laboratory instruments.	
21.0	Demonstrate basic knowledge of and perform clinical laboratory Point of Care (POC) testing (Waived)- The student will be able to	
21.01	Demonstrate the ability to interpret instructions of point of care testing including , but not limited to the following:	
	21.04.01	Test principle
	21.04.01	Storage & Stability
	21.04.01	Internal vs. External Quality Control
	21.04.01	Specimen collection & preparation
	21.04.01	Directions for use
	21.04.01	Interpretation of results
	21.04.01	Interfering substances

	21.02	Demonstrate and discuss knowledge of lot numbers use and importance in regard to both kits and reagents.
	21.03	Demonstrate knowledge of the frequency in which quality control procedures should be performed.
	21.04	Explain the CLIA 88 classification of laboratory testing into waived, moderate, and highly complex including the personnel qualified to perform each.
22.0	Demonstrate basic knowledge of and perform Point of Care(POC) Testing using CLIA approved Waived instrumentation- The student will be able to	
	22.01	Demonstrate and perform POC testing specific to microbiology, hematology, urinalysis, and clinical chemistry.
	22.02	Demonstrate competence in instrument maintenance.
	22.03	Demonstrate knowledge of quality control and calibrations involved within the POC instruments.
	22.04	Identify normal limits and associate abnormal results with disease or disorders.
	22.05	Discuss the significance of reporting critical values as it applies to Point of Care testing.
23.0	Discuss the general responsibilities and functions encountered by a medical technician–The students will be able to:	
	23.01	Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
	23.02	Organize and communicate the results obtained by observation and experimentation.
	23.03	Demonstrate ability to evaluate and draw conclusions.
	23.04	Demonstrate ability to report observations in written or oral form.
	23.05	Discuss the licensure and certification requirements of the major classifications of clinical laboratory personnel.
24.0	Apply quality assurance principles and safety protocols–The student will be able to:	
	24.01	Recognize specimen suitability and determine need for rejection/recollection using factors described in clinical protocol.
	24.02	Describe special procedures for transporting and processing specimens.
	24.03	Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance of equipment.
	24.04	Demonstrate required calibration procedures.
	24.05	Demonstrate and record quality control procedures required for the tests performed and recognize unacceptable results.
	24.06	Report identified problems encountered in daily quality control according to standard operating procedures.
	24.07	Comply with current OSHA regulations regarding laboratory hazards.

25.0	Demonstrate knowledge of the operation of computer systems–The student will be able to:
	25.01 Discuss the role of computer systems in laboratory data management.
	25.02 Demonstrate knowledge of common computer terminology.
	25.03 Demonstrate entry level computer operations for specimen accessioning, data reporting, and quality control recording.
	25.04 Demonstrate entry level operational skills in the use of computer-interfaced analytical instrumentation.
26.0	Demonstrate an understanding of the basic principles of molecular diagnostics
	26.01 Discuss the principles and major steps of the polymerase chain reaction (PCR).
	26.02 Label the organelles and important parts of a eukaryotic animal cell.
	26.03 Describe the function of the organelles and important parts of a eukaryotic animal cell.
	26.04 Discuss the structure, function, and components of DNA and RNA.
	26.05 Define the key terms of molecular diagnostics.
	26.06 Understand the principles of molecular diagnostic testing.
	26.07 Compare the advantages and disadvantages of molecular techniques over traditional diagnostic tests for infectious diseases.
	26.08 List molecular tests associated with the identification of microorganisms.
	26.09 Identify the types of samples appropriate for molecular diagnostics.
	26.10 Discuss the ethical impact of genetic technologies on the delivery of health care.
	26.11 Outline requirements for reducing contamination in a molecular lab.
	26.12 Discuss nucleic acid probes and their role in clinical laboratory diagnostics.
27.0	Demonstrate knowledge of urinalysis and body fluids principles and procedures–The student will be able to:
	27.01 Identify the components of the urinary system and explain their functions.
	27.02 Discuss diseases affecting the urinary system.
	27.03 Describe collection, transport and storage procedures for random and timed urine specimens.
	27.04 Discuss physical properties related to normal and abnormal components of the urine including related odors, color.

	27.05	Discuss specific gravity techniques; calibration and use of the refractometer.
	27.06	Perform dipstick or tablet (nonautomated) urinalysis techniques for chemical exam of the urine and interpret results
	27.07	Demonstrate the proper use of urine strip readers.
	27.08	Describe renal function tests.
	27.09	Describe principles of and perform routine physical and chemical analyses on urine.
	27.10	Prepare urine sediments and perform identification and quantitation of microscopic formed elements.
	27.11	Correlate abnormal physical, chemical and microscopic urine results with associated pathological conditions.
	27.12	Define and discuss the differences between transudates and exudates.
	27.13	Discuss miscellaneous body fluids to include cerebral spinal, seminal and joint fluids.
	27.14	Perform physical, chemical and microscopic evaluations of common body fluids.
28.0	Demonstrate knowledge of hematological principles and procedures–The student will be able to:	
	28.01	Discuss the organs, cells and cellular interaction of the lymphoid, myeloid and reticuloendothelial systems.
	28.02	Demonstrate an understanding of basic concepts of hematopoietic regulation, proliferation and cellular differentiation.
	28.03	Identify the components of blood.
	28.04	Discuss the function of formed elements of blood.
	28.05	Demonstrate an understanding of the synthesis of normal and abnormal molecular structure of hemoglobin, common hemoglobinopathies and associated tests.
	28.06	Describe normal hemoglobin-oxygen function using the Oxygen Dissociation Curve (ODC).
	28.07	Discuss assessment and impact of preanalytical, analytical and post-analytical factors on hematology testing.
	28.08	Discuss techniques of hematology related to calculation of red blood cell indices.
	28.09	Discuss selected cytochemical staining and flowcytometry procedures.
	28.10	Perform standard operational procedures to evaluate erythrocytes and their physical properties using patient blood and quality control samples.
	28.11	State the review process of histogram/scatterplot/scattergram analysis.
	28.12	Describe the categories used in a morphological classification of anemias.

	28.13	Correlate automated hemogram parameter for red cell indices with peripheral exam of blood smear.
	28.14	List the maturation sequence and identify distinguishing morphology for stages of developing white blood cells or leukocytes using stained smears, photographs, electronic images or other visual means of representation.
	28.15	Discuss normal and abnormal hematology findings, reference ranges and associated diseases.
	28.16	Demonstrate an understanding of,normal and abnormal white cell morphology, related disease states and associated tests.
	28.17	Discuss the principles of and perform routine hematology procedures applying quality control procedures.as necessary.
	28.18	Perform commonly used methods to evaluate leukocytes, correlate and verify automated cell counts with established criteria.
	28.19	Identify the criteria used to classify nonmalignant leukocytic disorders, e.g. shift to the left, toxic granulation, Döhle bodies, etc.
	28.20	Perform techniques of manual blood smear evaluation including white blood cell differential, red cell and platelet morphology.
	28.21	Correlate peripheral blood evaluation with automated cell analysis.
	28.22	Perform platelet counts on patient and control specimens using manual and automated techniques and correlate counts with peripheral smear.
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	29.01	Discuss and define the interactive systems necessary to maintain hemostasis.
	29.02	Discuss common coagulopathies and associated treatments and therapies.
	29.03	Discuss assessment and impact of preanalytical factors on hemostasis testing
	29.04	Describe the principles of and perform routine testing used in the evaluation of the vascular, platelet, coagulation and fibrinolytic systems.
	29.05	Discuss additional hemostasis tests performed to differentiate the cause of abnormal routine tests.
30.0	Demonstrate knowledge of immunology principles and procedures–The student will be able to:	
	30.01	Discuss the functions of the cells of the immune system, cytokines and regulatory molecules.
	30.02	Discuss physical and chemical properties of immunogens (antigens), immunoglobulins (antibodies) and complement
	30.03	Describe their roles in both *in vivo* and *in vitro* reactions.
	30.04	Compare and contrast the principles of basic agglutination, flocculation and precipitation procedures in immunology/serology.
	30.05	Perform basic procedures in immunology/serology.
	30.06	Discuss principles of, immunoelectrophoresis, immunofixationand enzyme immunoassay.

30.07	Discuss the clinical significance of the commonly performed immunology/ tests.
30.08	Discuss selected specialty serological tests such as immuno assays.
31.0	**Demonstrate knowledge of clinical chemistry principles and procedures–The student will be able to:**
31.01	Identify the chemistry analytes used to evaluate various body systems.
31.02	Discuss the renal system and related chemistry tests.
31.03	Discuss principles of and perform common renal function tests.
31.04	Discuss carbohydrate, protein and lipid metabolism.
31.05	Discuss principles of and perform commonly ordered tests related to carbohydrate, protein and lipid metabolism.
31.06	Discuss the liver and its functions as related to chemistry tests.
31.07	Discuss principles of and perform commonly ordered liver function tests.
31.08	Discuss enzyme classification, origin, activity and function.
31.09	Discuss principles of and perform commonly ordered enzyme procedures.
31.10	Discuss electrolyte balance as related to health and disease.
31.11	Discuss principles of and perform electrolyte analyses.
31.12	Discuss principles of and perform commonly ordered tests to evaluate cardiac function.
31.13	Discuss the physiology of the endocrine system and the principal tests used to evaluate endocrine function.
31.14	Discuss the role of the laboratory in therapeutic drug monitoring and toxicology.
31.15	Discuss and perform general electrophoresis techniques.
31.16	Discuss the clinical significance of commonly ordered chemistry tests.
31.17	Demonstrate knowledge of principles of instrumentation as related to the clinical chemistry laboratory.
31.18	Discuss techniques of clinical chemistry related to standardization of procedure and use of standards, blanks and controls.
31.19	Discuss techniques of clinical chemistry related to visual colorimetry; calibration and use of the spectrophotometer.
31.20	Discuss basic techniques of clinical chemistry related to normal and abnormal physiology.

32.0	Demonstrate knowledge of immunohematology principles and procedures–The student will be able to:	
	32.01	Discuss donor interview, criteria for selection, phlebotomy preparation, and donor blood processing.
	32.02	Discuss blood component collection and, preparation, storage and use.
	32.03	Describe the roles of FDA, AABB, and state agencies and how to contact each.
	32.04	Compare advantages and disadvantages for autologous, versus homologous (allogenic) blood collection and transfusion.
	32.05	Discuss basic genetics of the blood group antigens
	32.06	Discuss the ABO and Rh blood group systems and differentiate by using appropriate testing procedures.
	32.07	Describe required tests on recipient blood samples and recognize discrepancies of ABO typing results.
	32.08	Discuss and differentiate other blood group systems such as Duffy, Kell, Kidd, S,s, Lu and the common usually cold-reacting antibodies such as Le, P, I, M and N.
	32.09	Perform antigen and antibody testing to determine Rh phenotypes.
	32.10	Apply properties of blood group antigens to perform and interpret antibody screening.
	32.11	Perform identification tests to detect clinically significant antibodies.
	32.12	Discuss the safety and determine compatibility of blood components for transfusion.
	32.13	Discuss and perform routine compatibility testing including the immediate spin crossmatch and the electronic crossmatch.
	32.14	Discuss and perform red cell antigen typing on recipient donor specimens.
	32.15	Identify symptoms of and required laboratory protocol for handling suspected transfusion reactions.
	32.16	Discuss immune hemolytic disorders and perform the direct antiglobulin test.
	32.17	Discuss appropriate absorption and elution techniques.
	32.18	Verify appropriate quality control (QC) on reagents.
	32.19	Describe the immune process which causes hemolytic disease of the fetus and newborn.
33.0	Demonstrate knowledge of microbiological principles and procedures–The student will be able to:	
	33.01	Discuss microbial taxonomy and nomenclature.
	33.02	Discuss bacterial metabolism, reproduction, cell structures and their functions.

33.03	Discuss classification, composition and preparation of culture media.
33.04	Discuss the human pathogenesis of bacteria.
33.05	Discuss and perform techniques of microbiology related to sterilization techniques.
33.06	Perform culturing techniques for urine, stool, wound, throat, body fluids, blood and exudates.
33.07	Perform techniques of microbiology related to inoculation and transfer of cultures.
33.08	Discuss the principles of Gram and AFB stains.
33.09	Accurately perform, read and report gram stains.
33.10	Perform techniques necessary for isolation and identification of aerobic and anaerobic bacterial organisms.
33.11	Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
33.12	Perform and interpret antibiotic susceptibility tests.
33.13	Discuss collection and handling of specimens for fungal, mycobacterial and viral culture.
33.14	Prepare and examine specimens, and identify ova and parasites when present.

<p align="center">**Additional Information**</p>

Laboratory Activities

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

Clinical learning experiences in a clinical laboratory and related areas are an integral part of this program. Clinical learning experiences should reflect the full breadth of responsibilities expected of a Medical Laboratory Technician and should include appropriate experience in each of the areas of the laboratory described herein. The specified length for each of the courses listed is inclusive of clinical experience for each of the respective laboratory sections.

Special Notes

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

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

Either a community college or school district may offer the ATD program. When offered at the community college, college credit shall be awarded for completion of this program. When offered at the school district, vocational credit will be awarded. Vocational credit will be converted to college credit upon transfer to the AS degree at the community college.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.
The programs should be accredited by:

> The Accrediting Bureau of Health Education Schools (ABHES)
> 7777 Leesburg Pike, Suite 314
> North Falls Church, VA 22403
> (703) 917-9503 Fax (703) 917-4109
> info@abhes.org

Or any other agency as specified by the Division of Medical Quality Administration, Board of Clinical Laboratory Personnel Chapter 483 F.S., Rule 590 FAC, "Florida Clinical Laboratory Personnel Law". The graduate of a board approved program should be prepared to take the appropriate licensing examination to practice in Florida and an appropriate national certifying examination. For further information contact:

Board of Clinical Laboratory Personnel
4052 Bald Cypress Way, Bin CO7
Tallahassee, FL 32399-3257
(850) 245-4444 x3625

National Certification is voluntary and may be obtained from the:
American Medical Technologists
710 Higgins Rd.
Park Ridge, IL. 60068
(847) 823-5169 or
800-275-1268

Or

National Healthcareer Association
7500 West 160th Street
Stilwell, Kansas 66085
800-499-9092
(973) 644-4797
www.nhanow.com

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Basic Skills

In PSAV programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C. the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 11, and Reading 11. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted

from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed on the Basic Skills and Licensure Exemption List which may be accessed from the CTE Program Resources page.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Program Length

In accordance with Rule 6A-10.024, F.A.C. an ATD program consists of a course of study that is part of an AS or AAS degree program, is less than 60 credit hours, is approximately 50% of the technical component (non-general education), and leads to employment in a specific occupation. An ATD program may consist of either technical credit or college credit.

Students must have a high school diploma, a GED, or a certificate of completion to be admitted to an ATD program. Within six weeks of entry, students in ATD programs of 450 or more hours must be tested pursuant to Rule 6A-10.040, F.A.C. and if below minimum standards for completion from the program, must receive remedial instruction. The minimum standards must be at least the equivalent of a score of ten (10) on all sections of basic skills test approved in Rule 6A-10.040, F.A.C. Students must successfully complete all remedial instruction before completing the ATD.

Community Colleges may offer either college or career credit toward the ATD. A Career Center in a public school district may offer an ATD program only as technical credit, with college credit awarded to a student upon articulation to a community college (Section 1004.02, F.S.)

When offered at a community college the standard length of this program is 40 credits. When offered at a technical center the standard length of this program is 1515 clock hours.

In accordance with Rule 6A-10.024, F.A.C. all faculty providing instruction must have at least a baccalaureate degree or an associate degree with demonstrated competencies in the specific instructional program as defined by the Southern Association of Colleges and Schools.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Ophthalmic Laboratory Technician**
Career Cluster: **Health Science**

CCC	
CIP Number	0351100600
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	51-9083 Ophthalmic Laboratory Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Ophthalmic Technician AS degree program (1351180301).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

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

The purpose of this program is to prepare students for employment as Ophthalmic Laboratory Technicians. SOC Code 51-9083 (Ophthalmic Laboratory Technicians).

The content includes but is not limited to basic instruction in anatomy and physiology, CPR, Heartsaver, office practices and dispensing of visual devices. Because optometrists now deal with certain drugs, students need knowledge of diagnostic and therapeutic drugs under supervision.

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

Standards

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

01.0   Demonstrate knowledge of the health care delivery system and health occupations.
02.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
03.0   Demonstrate legal and ethical responsibilities.
04.0   Demonstrate an understanding of and apply wellness and disease concepts.
05.0   Recognize and practice safety and security procedures.
06.0   Recognize and respond to emergency situations.
07.0   Recognize and practice infection control procedures.
08.0   Demonstrate an understanding of information technology applications in healthcare.
09.0   Demonstrate employability skills.
10.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
11.0   Apply basic math and science skills.
12.0   Perform lens preparation.
13.0   Demonstrate knowledge of edging lenses.
14.0   Perform edging using appropriate automatic equipment.
15.0   Perform edging using appropriate hand edging equipment.
16.0   Demonstrate knowledge of impact resistant lenses.
17.0   Demonstrate knowledge of insets and prisms in lenses.
18.0   Perform special procedures.

Florida Department of Education
Student Performance Standards

Program Title: **Ophthalmic Laboratory Technician**
CIP Number: **0351100600**
Program Length: **24 credit hours**
SOC Code(s):   **51-9083**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_-core_psav_cc_1516.rtf

This certificate program is part of the Ophthalmic Technician AS degree program (1351180301). At the completion of this program, the student will be able to:
Completion of the following competencies (12-18) lead to completion point of SOC Code 51-9083 (Ophthalmic Laboratory Technicians)
12.0   Perform lens preparation–The student will be able to:
12.01   Define the terms pertaining to surfacing.
12.02   Relate the RX to surfacing spherical lenses.
12.03   Calculate laps for spherical lenses.
12.04   Determine the thickness calculations for spherical lenses.
12.05   Prepare a lot spherical lenses for surfacing.
12.06   Block spherical lenses for surfacing glass and plastic.
12.07   Set up a generator for surfacing plus and minus grind spherical lenses.
12.08   Fine spherical glass and plastic lenses.

	12.09	Polish spherical glass and plastic lenses.
	12.10	Inspect and deblock finished lenses.
	12.11	Define terms pertaining to sphero-cylinder lenses.
	12.12	Relate RX to surfacing cylindrical lenses for flat transposition and toric transposition.
	12.13	Calculate base curve and laps for surfacing cylindrical lenses.
	12.14	Thickness calculations for cylindrical lenses.
	12.15	Enter information on job ticket.
	12.16	Layout lenses for surfacing cylindrical lenses.
	12.17	Set-up the generator for surfacing cylindrical lenses.
	12.18	Define the terms relating to multifocal lenses.
	12.19	Relate Rx to surfacing multifocal lenses.
13.0	Demonstrate knowledge of edging lenses–The student will be able to:	
	13.01	Explain the need to verify a lens before edging.
	13.02	Describe the methods to verify a lens before edging.
	13.03	Describe the "Boxing System".
	13.04	Explain the need for decentering a lens.
	13.05	Give examples that bring about decentration in and/or out when laying out for edging.
	13.06	Explain how thickness is verified and the need to control it.
	13.07	Explain 5 surface defects a lens may have and how an optician would be able to detect each.
	13.08	Apply A.N.S.I. Z-80 standards when verifying uncut, edged and mounted single vision lenses.
14.0	Perform edging using appropriate automatic equipment–The student will be able to:	
	14.01	Explain the procedures to layout for edging single vision spherical and cylindrical lenses.
	14.02	Demonstrate the ability to layout single vision lenses for edging.

	14.03	Explain why verification of the layout is necessary.
	14.04	Explain how the optician will verify the layout and what will be checked.
	14.05	Explain the different uses the pattern may have in verifying the layout of lenses.
	14.06	Explain the use of the "Box-o-graph" for patterns and lenses.
	14.07	Demonstrate the ability to verify a layout.
	14.08	Demonstrate the ability to make patterns.
	14.09	Explain methods of blocking lenses for edging.
	14.10	Explain sizing procedures including set, set size, and on size.
	14.11	Explain the procedures to edge lenses in various automatic edgers.
	14.12	Explain a standard bevel and its uses.
	14.13	Explain a hide-a-bevel and its uses.
	14.14	Explain a flat bevel and its uses.
	14.15	Explain a grooved bevel and its uses.
	14.16	Explain a 1/3 - 2/3 bevel and its uses.
	14.17	Explain combination bevels and what they are used for.
	14.18	Explain maintenance schedules and calibration techniques for blocking and edging equipment.
	14.19	Demonstrate the ability to block lenses, edge lenses using the automatic edgers, and control sizing.
15.0	Perform edging using appropriate hand edging equipment–The student will be able to:	
	15.01	Describe the different types of handedgers.
	15.02	Compare and contrast the advantages and/or disadvantages of ceramic and diamond hand edgers.
	15.03	Explain the methods of hand beveling.
	15.04	Explain the reasons for not re-edging glass lenses.
	15.05	Explain the methods to re-edge lenses.

	15.06	Explain the reasons for and use of safety or pin bevels.
	15.07	Explain the difference between hand edging or beveling and safety or pin beveling.
	15.08	Demonstrate the ability to hand bevel and/or reshape lenses to fit any given frame.
	15.09	Demonstrate the ability to insert lenses into various frames
	15.10	Explain the methods of hand beveling.
	15.11	Explain the reasons for not re-edging glass lenses.
	15.12	Explain the methods to re-edge lenses.
	15.13	Explain the uses for the polarascope.
	15.14	Demonstrate the ability to hand bevel and/or reshape lenses to fit any given frame.
	15.15	Edge lenses using the HORIZON edger.
	15.16	Explain prism as it relates to edging of single vision lenses, including decentered and ground.
	15.17	Explain the procedure for laying out single vision lenses with prism.
	15.18	Explain maintenance schedules and calibration techniques for edging equipment.
16.0	Demonstrate knowledge of impact resistant lenses–The student will be able to:	
	16.01	Explain the heat treating method of making lenses impact resistant.
	16.02	Explain the chemical treating method of making lenses impact resistant.
	16.03	Explain what happens in the process of making a lens impact resistant.
	16.04	Explain the drop ball test and when to use it according to FDA regulations.
	16.05	Explain the legal responsibility in relationship to impact resistant lenses.
	16.06	Explain different types of lens materials and their relationship to impact resistance.
17.0	Demonstrate knowledge of insets and prisms in lenses–The student will be able to:	
	17.01	Explain what is meant by segment position for edging and give examples of computation for segment position in bifocal lenses.
	17.02	Explain inset and relate it to the Rx, the patient, and the lenses.

	17.03	Explain total decentration or total inset.
	17.04	Explain the method of achieving prism in a multifocal.
	17.05	Explain the procedures to layout flat bifocal lenses.
	17.06	Demonstrate the ability to layout and edge flat top bifocal lenses.
18.0	Perform special procedures–The student will be able to:	
	18.01	Layout SV, ST, Round, Exec, Progressive and other lenses.
	18.02	Block lenses.
	18.03	Calculate set sizes.
	18.04	Make patterns.
	18.05	Hand bevel lenses.
	18.06	Safety bevel lenses.
	18.07	Reshape lenses.
	18.08	Dye lenses.
	18.09	UV treat lenses.
	18.10	Heat treat lenses.
	18.11	Chemical treat lenses.

Additional Information

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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 are prepared to assist in performing tests to determine defects in vision, preparing and fitting eyeglasses and contact lenses, and administering corrective eye exercises and other treatments under the supervision of a person licensed under FL Statutes 458, 459, 463 or 484.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Students should be strongly encouraged to take the Certification examination offered by the Paraoptometric Section of the American Optometric Association.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

HOSA: Future Health Professionals is the intercurricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Eye Care Technician
Career Cluster: Health Science

CCC	
CIP Number	0351180302
Program Type	College Credit Certificate (CCC)
Program Length	48 credit hours
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Ophthalmic Technician AS degree program (131180301).

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 Eye Care Technicians. SOC Code 31-9099 (Healthcare Support Workers, All Other)

The content includes but is not limited to basic instruction in anatomy and physiology, CPR, Heartsaver, office practices and dispensing of visual devices. Because optometrists now deal with certain drugs, students need knowledge of diagnostic and therapeutic drugs under supervision.

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

Standards

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

01.0   Demonstrate knowledge of the 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   Report and record patient information.
13.0   Demonstrate knowledge of business management techniques.
14.0   Performs delivery of optical devices.
15.0   Perform and assist in procedures used in visual testing.
16.0   Perform special procedures.
17.0   Demonstrate knowledge of the refractive status of the eye and binocularity.
18.0   Demonstrate knowledge of basic ocular anatomy and physiology.

**Florida Department of Education
Student Performance Standards**

Program Title: **Eye Care Technician**
CIP Number: **0351180302**
Program Length: **48 credit hours**
SOC Code(s): **31-9099**

Standards 1-11 are referred to as the **Health Science Core** and are required standards in this program. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link: http://www.fldoe.org/core/fileparse.php/5652/urlt/health_sci_- core_psav_cc_1516.rtf

This certificate program is part of the Ophthalmic Technician AS degree program (131180301). At the completion of this program, the student will be able to:
The completion of the following competencies (12-18) leads to the completion point of SOC Code 31-9099 (Healthcare Support Workers, All Other)
12.0   Report and record patient information–The student will be able to:
12.01   Properly identify patients.
12.02   Obtain specified data from patient and family regarding visual status.
12.03   Receive and give oral report of patient's visual status.
12.04   Report and record pertinent observations of visual status.
12.05   Utilize verbal and written information to assist with the plan of care for the patient.
13.0   Demonstrate knowledge of business management techniques–The student will be able to:
13.01   Demonstrate knowledge of legal and ethical standards of vision care professionals.
13.02   Demonstrate the use of several means of communication.
13.03   Maintain and file patient records.

	13.04	Bill and collect current and overdue accounts.
	13.05	Practice office supply control.
	13.06	Demonstrate knowledge of medical terminology.
	13.07	Practice accepted work ethic.
	13.08	Demonstrate basic maintenance of equipment.
	13.09	Schedule patients.
	13.10	Complete and file third party forms.
	13.11	Type 25 words per minute correctly.
14.0	Perform delivery of optical devices–The student will be able to:	
	14.01	Transcribe, transpose, and interpret prescriptions.
	14.02	Neutralize and verify lenses.
	14.03	Edge and insert lenses.
	14.04	Select and order lenses.
	14.05	Adjust, dispense and repair spectacles.
	14.06	Assist patients with frame and lens selection.
	14.07	Demonstrate knowledge of basic mathematical principles that are involved in ophthalmic and geometrical optics.
	14.08	List the types of repairs which can be performed on plastic and metal frames and describe how these repairs are accomplished.
	14.09	Demonstrate knowledge of various lens designs and materials.
15.0	Perform and assist in procedures used in visual testing–The student will be able to:	
	15.01	Perform vision screening and preliminary testing.
	15.02	Measure and record visual acuity.
	15.03	Measure and record color vision.
	15.04	Measure and record stereo acuity.

15.05	Take and record patient histories.
15.06	Perform chairside assisting.
15.07	Describe components of and instrumentation used in comprehensive vision evaluation.
16.0	**Perform special procedures–The student will be able to:**
16.01	Assist in fitting contact lenses.
16.02	Instruct patients in care and handling of contact lenses.
16.03	Use selected instruments to verify contact lenses.
16.04	Demonstrate knowledge of the advantages and disadvantages of various contact lens materials and designs.
16.05	Demonstrate knowledge of vision therapy.
16.06	Measure and record intraocular pressure.
16.07	Measure and record a visual field.
16.08	Demonstrate knowledge of diagnostic and therapeutic drugs.
17.0	**Demonstrate knowledge of the refractive status of the eye and binocularity–The student will be able to:**
17.01	Demonstrate knowledge of refractive errors.
17.02	Demonstrate knowledge of visual deficiencies.
17.03	Demonstrate knowledge of ocular motility.
17.04	Demonstrate knowledge of binocular vision.
17.05	Demonstrate ability to communicate knowledge to patients.
17.06	Demonstrate the ability to recognize sight threatening emergencies.
18.0	**Demonstrate knowledge of basic ocular anatomy and physiology–The student will be able to:**
18.01	Demonstrate knowledge of ocular anatomy.
18.02	Demonstrate knowledge of ocular physiology.
18.03	Demonstrate knowledge of pathological and functional disorders of the eye.

18.04   Correlate general health as it relates to ocular health.

Additional Information

Laboratory Activities

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

Special Notes

This program meets the Department of Health 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 are prepared to assist in performing tests to determine defects in vision, preparing and fitting eyeglasses and contact lenses, and administering corrective eye exercises and other treatments under the supervision of a person licensed under FL Statutes 458, 459, 463 or 484.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the health care industry; planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Students should be strongly encouraged to take the Certification examination offered by the Paraoptometric Section of the American Optometric Association.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

Outcomes 01-11 are referred to as the Health Careers Core and do not have to be completed if the student has previously completed the Core in another health science program. The CORE should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

Career and Technical Student Organization (CTSO)

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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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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, 30, 31
Standard Length	Multiple credits
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list)
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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.

Common Career Technical Core – Career Ready Practices

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

1. Act as a responsible and contributing citizen and employee.

2. Apply appropriate academic and technical skills.

3. Attend to personal health and financial well-being.

4. Communicate clearly, effectively and with reason.

5. Consider the environmental, social and economic impacts of decisions.

6. Demonstrate creativity and innovation.

7. Employ valid and reliable research strategies.

8. Utilize critical thinking to make sense of problems and persevere in solving them.

9. Model integrity, ethical leadership and effective management.

10. Plan education and career path aligned to personal goals.

11. Use technology to enhance productivity.

12. Work productively in teams while using cultural/global competence.

Standards

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

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

Florida Department of Education
Student Performance Standards

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

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

Additional Information

Laboratory Activities

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

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Course Title: **Orientation to Health Occupations**
Course Type: **Orientation/Exploratory**
Career Cluster: **Health Science**

Secondary – Middle School	
Program Number	8400110
CIP Number	03179999OR
Grade Level	6-8
Standard Length	Semester
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list) HEALTH 6
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Health Science career cluster.

The content includes but is not limited to basic information about the kinds of jobs and workers involved the various career paths, financial rewards, occupational hazards, and educational requirements. Information concerning the practices for promoting good health is included

. 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.

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

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Standards

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

01.0   Recognize progress in health care service.
02.0   Show an awareness of health careers.
03.0   Identify life stages and the health care needs of each.
04.0   Demonstrate basic communication skills.
05.0   Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker.
06.0   Demonstrate an understanding of principles of wellness.
07.0   Demonstrate an understanding of the sciences in the health care field.
08.0   Explore the multiple facets of wellness and disease.
09.0   Perform basic health care skills.
10.0   Demonstrate employability skills related to a health occupation.
11.0   Demonstrate occupational safety.
12.0   Describe and use communication features of information technology.
13.0   Identify components of network systems.

Florida Department of Education
Student Performance Standards

Course Title: **Orientation to Health Occupations**
Course Number: **8400110**
Course Length: **Semester**

CTE Standards and Benchmarks
01.0 Recognize progress in health care service–The student will be able to:
01.01 Compare medical progress from early times to the present. For example: surgical techniques, anesthesia, treatment and equipment.
01.02 Discuss health care leaders who brought about change and progress from early times to the present.
02.0 Show an awareness of health careers–The student will be able to:
02.01 Describe the relationship between self-awareness and satisfying career choices.
02.02 Demonstrate an understanding of tasks related to health service careers.
02.03 Identify the personal traits required for employment in health care.
02.04 List factors related to job satisfaction.
02.05 Complete a project, solve a problem, or complete an activity related to a career through team or group work.
02.06 Identify at least three occupations out of each of Health Science Career Pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, Bio-technology Research and Development.
02.07 List the advantages and disadvantages of one occupation in each pathway including the following factors; job opportunities, salary range, fringe benefits, working conditions, occupational hazards, and educational requirements.
02.08 Recognize the differences between volunteer and governmental agencies in healthcare.
02.09 Identify types of education and training levels as related to health careers.
02.10 Understand and appreciate the importance of legal and ethical behaviors as related to health careers.
03.0 Identify life stages and the health care needs of each–The student will be able to:
03.01 Describe common health care needs from birth to death and identify occupations that address those needs.
03.02 Identify occupations aimed at promoting optimum health.

CTE Standards and Benchmarks
04.0 Demonstrate basic communication skills–The student will be able to:
04.01 Demonstrate the ability to follow written and oral directions.
04.02 Demonstrate examples of verbal and non-verbal communication.
04.03 Recognize the role and use of terminology and abbreviations used in various health occupations.
05.0 Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker–The student will be able to:
05.01 Describe the importance of why accurate calculations and effective problem solving skills are required.
05.02 Accurately identify and perform appropriate numeric procedures with problems found in numeric, symbolic, or word form as they relate to the occupations.
05.03 Convert common weights, measure, and volumes to metric as applied in the health care setting.
06.0 Demonstrate an understanding of principles of wellness–The student will be able to:
06.01 Describe how cultural and individual differences relate to wellness and quality of life and how these differences impact health problems of society.
06.02 Demonstrate an understanding of the risk factors that contribute to illness.
06.03 Identify consequences of substance abuse and high risk behaviors.
06.04 Identify ecological issues that affect wellness and identify environmental careers associated such as parks and recreation, health inspectors, sanitariums.
07.0 Demonstrate an understanding of the sciences in the health care field–The student will be able to:
07.01 Demonstrate knowledge of how the scientific method and advances in science have impacted beliefs and practices from ancient times to the present.
07.02 Recognize the role science has in the health field.
07.03 Identify the various science educational courses required by various health occupations.
08.0 Explore the multiple facets of wellness and disease–The student will be able to:
08.01 Describe strategies for prevention of diseases including health screenings and examinations.
08.02 Discuss the adverse effects of alcohol, tobacco, and drugs on the human body and strategies to prevent addiction in yourself and others.
08.03 Explain basic concepts of positive self-image, body and mental wellness and the effect stress has on both.

	08.04	Explore basic information on the dangers of blood borne diseases in healthcare including but not limited to HIV/AIDS and Hepatitis B.
	08.05	Explore the need for proper nutrition (www.myplate.gov) and water intake to maintain wellness.
09.0	Perform basic health care skills–The student will be able to:	
	09.01	Measure and record (graph) height, weight, and temperature, pulse and respiration (TPR), intake and output of body fluids.
	09.02	Demonstrate medical aseptic technique by hand washing, gloving, and application of mask and gown.
	09.03	Perform proper body mechanics to prevent self and patient injuries.
	09.04	Demonstrate basic first aid skills including Cardiopulmonary resuscitation (CPR) and the Heimlich maneuver.
	09.05	Recognize the need for personal comfort measures to include skin care, bed bath, bed making, and mouth care.
	09.06	Show an awareness of safe patient transfer techniques.
	09.07	Recognize the importance of instructions to patients in safe use of assisting devices.
10.0	Demonstrate employability skills related to a health occupation–The student will be able to:	
	10.01	List skills needed for employment in a health occupation of choice.
	10.02	At a minimum, demonstrate the skills used within two of the health occupations from the following list:
	10.02.01	Allied Health Assisting: Use of a Wheelchair, Crutches and/or Walkers
	10.02.02	Visualizing X-rays
	10.02.03	Dental Aide: Making Dental Molds
	10.02.04	First Responder: Basic First Aide/Rescue Breathing
	10.02.05	Home Health Aide: Menu Planning
	10.02.06	Patient Feeding Techniques
	10.02.07	Vision Care Assisting: Designing Eye Glasses
	10.02.08	Personal Fitness Trainer: Create an exercise regimen to either build muscle or lose weight
	10.02.09	Pharmacy Technician: Fill a mock prescription

CTE Standards and Benchmarks
11.0   Demonstrate occupational safety–The student will be able to:
11.01   Discuss occupational safety issues that relate to the employer, employee, and the patient in the health care setting.
11.02   Demonstrate health safety habits that will prevent injury to health care workers, co-workers, and patients.
11.03   Show an awareness of the importance of identifying poisons and hazardous materials commonly found in the workplace.
11.04   Describe the importance of fire safety including prevention and evacuation.
12.0   Identify components of network systems–The student will be able to:
12.01   Identify structure to access internet, including hardware and software components.
12.02   Identify and configure user customization features in web browsers, including preferences, caching, and cookies.
12.03   Recognize essential database concepts.
12.04   Define and use additional networking and internet services.
13.0   Describe and use communication features of information technology–The student will be able to:
13.01   Define important internet communications protocols and their roles in delivering basic Internet services.
13.02   Identify basic principles of the Domain Name System (DNS).
13.03   Identify security issues related to Internet clients.
13.04   Identify and use principles of personal information management (PIM), including common applications.
13.05   Efficiently transmit text and binary files using popular Internet services.
13.06   Conduct a webcast and related services.
13.07   Represent technical issues to a non-technical audience.

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

Special projects that are related to occupational clusters are provided, including making dental molds, designing eye glasses, fingerprinting, role playing activities of daily living as a handicapped individual, developing an emergency evacuation plan for their own home, menu planning, and visualizing x-rays. Team teaching and integration of the curriculum with English, Math and Science is encouraged.
Guest speakers from industry make an important contribution to the effectiveness of this course.

Career and Technical Student Organization (CTSO)

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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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: Exploration of Health Occupations and Career Planning
Program Type: Orientation/Exploratory and Career Planning
Career Cluster: Health Science

Secondary – Middle School	
Program Number	8400210
CIP Number	03179999CE
Grade Level	6-8
Standard Length	Semester
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list) FAM CON SC 1 HEALTH 6
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Health Science career cluster. The content includes but is not limited to exploratory activities relating to all health occupational clusters. The course also includes an introduction to medical ethics, consumerism, and characteristics of health care workers, community health agencies and basic computer literacy.

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.

The purpose of this course is to give students initial exposure to the skills and attitudes associated with a broad range of occupations relating to careers in health, including job requirements and tasks performed, to assist students in making informed decisions regarding their future academic and occupational goals.

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   Identify and discuss progress in health care.
02.0   Demonstrate an understanding of health careers.
03.0   Demonstrate an understanding of the importance of legal and ethical behavior related to health care.
04.0   Perform basic communication skills.
05.0   Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker.
06.0   Apply science principles to the health care field.
07.0   Perform basic health care skills.
08.0   Explore the multiple facets of wellness and disease.
09.0   Demonstrate occupational safety.
10.0   Identify components of network systems.
11.0   Describe and use communication features of information technology.

Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes.

12.0   Describe the influences that societal, economic, and technological changes have on employment trends and future training.
13.0   Develop skills to locate, evaluate, and interpret career information.
14.0   Identify and demonstrate processes for making short and long term goals.
15.0   Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
16.0   Understand the relationship between educational achievement and career choices/postsecondary options.
17.0   Identify a career cluster and related pathways through an interest assessment that match career and education goals.
18.0   Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.
19.0   Demonstrate knowledge of technology and its application in career fields/clusters.

Florida Department of Education
Student Performance Standards

Course Title: **Exploration of Health Occupations and Career Planning**
Course Number: **8400210**
Course Length: **Semester**

CTE Standards and Benchmarks
01.0   Identify and discuss progress in health care–The student will be able to:
01.01   Demonstrate knowledge of how the scientific method and advances in science have impacted beliefs and practices from ancient times to the present.
01.02   Compare the broad scope of health care delivery systems in homes, institutions, and the community.
01.03   Demonstrate ability to make informed decisions regarding choice of health care providers and products.
01.04   Research contributions made in the field of medical science and their impact on the health care field.
02.0   Demonstrate an understanding of health careers–The student will be able to:
02.01   Identify the personal traits required for employment in health care and discuss factors related to job satisfaction.
02.02   List at least three careers out of each of the health science career pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, Bio-technology Research and Development.
02.03   Demonstrate the knowledge and skills needed to do research.
02.04   List the advantages and disadvantages of one occupation in each pathway including the following factors; job opportunities, salary range, fringe benefits, working conditions, occupational hazards, and educational requirements.
02.05   Describe a career in detail chosen from one of the health science career pathways.
03.0   Demonstrate an understanding of the importance of legal and ethical behavior related to health care–The student will be able to:
03.01   Identify responsibilities in maintaining ethical standards, confidentiality, and the patient's rights.
03.02   Define terms related to the legal and ethical aspects of the health care industry. For example: malpractice, negligence, invasion of privacy, quackery, ethics and law, Patients' Bill of Rights.
03.03   Identify ethical and unethical conduct through simulated examples such as role playing, making posters, TV commercials, etc.
04.0   Perform basic communication skills–The student will be able to:
04.01   Demonstrate ability to follow written and oral directions including effective listening skills.

CTE Standards and Benchmarks

	04.02	Demonstrate examples of verbal and non-verbal communication.
	04.03	Identify employability skills necessary to obtain a job in health care.
	04.04	Demonstrate an understanding of how computers and other technology are used in the health care field.
	04.05	Use common medical terminology and abbreviations associated with health occupations.
05.0	Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker–The student will be able to:	
	05.01	Identify the importance of why accurate calculations and effective problem solving skills are required for health care workers.
	05.02	Calculate mathematical problems and measurements related to health care.
	05.03	Convert common weights, measure, and volumes to metric as applied in the health care setting.
06.0	Apply science principles to the health care field–The student will be able to:	
	06.01	Understand the role of scientific method in problem solving and medical research.
	06.02	Identify the general plan of the human body and how it functions.
	06.03	Demonstrate how the principles of physical science, biology, and microbiology apply within the health care industry.
07.0	Perform basic health care skills–The student will be able to:	
	07.01	Measure and record (graph) height, weight, and temperature, pulse and respiration (TPR), intake and output of body fluids.
	07.02	Demonstrate medical aseptic technique by hand washing, gloving, and application of mask and gown.
	07.03	Perform proper body mechanics to prevent self and patient injuries.
	07.04	Demonstrate basic first aid skills including Cardiopulmonary resuscitation (CPR) and the Heimlich maneuver.
	07.05	Recognize the need for personal comfort measures to include skin care, bed bath, bed making, and mouth care.
	07.06	Show an awareness of safe patient transfer techniques.
	07.07	Recognize the importance of instructions to patients in safe use of assisting devices.
08.0	Explore the multiple facets of wellness and disease–The student will be able to:	
	08.01	Describe strategies for prevention of diseases including health screenings and examinations.

	08.02	Discuss the adverse effects of alcohol, tobacco, and drugs on the human body and strategies to prevent addiction in yourself and others.
	08.03	Explain basic concepts of positive self-image, body and mental wellness and the effect stress has on both.
	08.04	Explore basic information on the dangers of blood borne diseases in healthcare including but not limited to HIV/AIDS and Hepatitis B.
	08.05	Explore the need for proper nutrition (www.myplate.gov) and water intake to maintain wellness.
09.0		Demonstrate occupational safety–The student will be able to:
	09.01	Discuss occupational safety issues that relate to the employer, employee, and the patient in the health care setting.
	09.02	Demonstrate health safety habits that will prevent injury to health care workers, co-workers, and patients.
	09.03	Show an awareness of the importance of identifying poisons and hazardous materials commonly found in the workplace.
	09.04	Describe the importance of fire safety including prevention and evacuation.
10.0		Identify components of network systems–The student will be able to:
	10.01	Identify structure to access internet, including hardware and software components.
	10.02	Identify and configure user customization features in web browsers, including preferences, caching, and cookies.
	10.03	Recognize essential database concepts.
	10.04	Define and use additional networking and internet services.
11.0		Describe and use communication features of information technology–The student will be able to:
	11.01	Define important internet communications protocols and their roles in delivering basic Internet services.
	11.02	Identify basic principles of the Domain Name System (DNS).
	11.03	Identify security issues related to Internet clients.
	11.04	Identify and use principles of personal information management (PIM), including common applications.
	11.05	Efficiently transmit text and binary files using popular Internet services.
	11.06	Conduct a webcast and related services.
	11.07	Represent technical issues to a non-technical audience.

CTE Standards and Benchmarks

Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes--The student will be able to:

12.0	Describe the influences that societal, economic, and technological changes have on employment trends and future training.
13.0	Develop skills to locate, evaluate, and interpret career information.
14.0	Identify and demonstrate processes for making short and long term goals.
15.0	Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
16.0	Understand the relationship between educational achievement and career choices/postsecondary options.
17.0	Identify a career cluster and related pathways through an interest assessment that match career and education goals.
18.0	Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.
19.0	Demonstrate knowledge of technology and its application in career fields/clusters.

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

Special projects that are related to each occupational cluster are provided, including role playing activities related to specific careers, visualizing x-rays and crutch-walking, operating the microscope, and specific lab procedures. Team teaching and integration of the curriculum with English, Math and Science is encouraged.

Guest speakers from industry and related field trips make important contributions to the effectiveness of this course.

Career Planning

The requirements of section 1003.4156 (1) (e), Florida Statutes, have been integrated into this course. The statute requires that students take a career and education planning course that must result in a completed personalized academic and career plan for the student; must emphasize the importance of entrepreneurship skills; must emphasize technology or the application of technology in career fields; and, beginning in the 2014-2015 academic year, must provide information from the Department of Economic Opportunity's economic security report as described in section 445.07, Florida Statutes. For additional information on the Middle School Career and Education Planning course requirements, go to http://www.fldoe.org/workforce/ced/.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Curriculum Framework

Program Title: **Exploration of Health Occupations**
Program Type: **Orientation/Exploratory**
Career Cluster: **Health Science**

Secondary – Middle School	
Program Number	8400310
CIP Number	03179999EX
Grade Level	6-8
Standard Length	Semester
Teacher Certification	ANY HEALTH OCCUP G *(See DOE approved list) FAM CON SC 1 HEALTH 6
CTSO	HOSA: Future Health Professionals
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Health Science career cluster. The content includes but is not limited to exploratory activities relating to all health occupational clusters. The course also includes an introduction to medical ethics, consumerism, characteristics of health care workers, community health agencies and basic computer literacy.

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.

The purpose of this course is to give students initial exposure to the skills and attitudes associated with a broad range of occupations relating to careers in health, including job requirements and tasks performed, to assist students in making informed decisions regarding their future academic and occupational goals.

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   Identify and discuss progress in health care.
02.0   Demonstrate an understanding of health careers.
03.0   Demonstrate an understanding of the importance of legal and ethical behavior related to health care.
04.0   Perform basic communication skills.
05.0   Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker.
06.0   Apply science principles to the health care field.
07.0   Perform basic health care skills.
08.0   Demonstrate occupational safety.

Florida Department of Education
Student Performance Standards

Course Title: **Exploration of Health Occupations**
Course Number: **8400310**
Course Length: **Semester**

CTE Standards and Benchmarks
01.0 Identify and discuss progress in health care–The student will be able to:
01.01 Demonstrate knowledge of how the scientific method and advances in science have impacted beliefs and practices from ancient times to the present.
01.02 Compare the broad scope of health care delivery systems in homes, institutions, and the community.
01.03 Demonstrate ability to make informed decisions regarding choice of health care providers and products.
01.04 Research contributions made in the field of medical science and their impact on the health care field.
02.0 Demonstrate an understanding of health careers–The student will be able to:
02.01 Identify the personal traits required for employment in health care and discuss factors related to job satisfaction.
02.02 List at least three careers out of each of the health science career pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, Bio-technology Research and Development.
02.03 Demonstrate the knowledge and skills needed to do research.
02.04 List the advantages and disadvantages of one occupation in each pathway including the following factors; job opportunities, salary range, fringe benefits, working conditions, occupational hazards, and educational requirements.
02.05 Describe a career in detail chosen from one of the health science career pathways.
03.0 Demonstrate an understanding of the importance of legal and ethical behavior related to health care–The student will be able to:
03.01 Identify responsibilities in maintaining ethical standards, confidentiality, and the patient's rights.
03.02 Define terms related to the legal and ethical aspects of the health care industry. For example: malpractice, negligence, invasion of privacy, quackery, ethics and law, Patients' Bill of Rights.
03.03 Identify ethical and unethical conduct through simulated examples such as role playing, making posters, TV commercials, etc.
04.0 Perform basic communication skills–The student will be able to:
04.01 Demonstrate ability to follow written and oral directions including effective listening skills.

	04.02	Demonstrate examples of verbal and non-verbal communication.
	04.03	Identify employability skills necessary to obtain a job in health care.
	04.04	Demonstrate an understanding of how computers and other technology are used in the health care field.
	04.05	Use common medical terminology and abbreviations associated with health occupations.
05.0	Perform basic mathematical calculations and demonstrate problem solving skills used by the health care worker–The student will be able to:	
	05.01	Identify the importance of why accurate calculations and effective problem solving skills are required for health care workers.
	05.02	Calculate mathematical problems and measurements related to health care.
	05.03	Convert common weights, measure, and volumes to metric as applied in the health care setting.
06.0	Apply science principles to the health care field–The student will be able to:	
	06.01	Understand the role of scientific method in problem solving and medical research.
	06.02	Identify the general plan of the human body and how it functions.
	06.03	Demonstrate how the principles of physical science, biology, and microbiology apply within the health care industry.
07.0	Perform basic health care skills–The student will be able to:	
	07.01	Measure and record (graph) height, weight, and temperature, pulse and respiration (TPR), intake and output of body fluids.
	07.02	Demonstrate medical aseptic technique by hand washing, gloving, and application of mask and gown.
	07.03	Perform proper body mechanics to prevent self and patient injuries.
	07.04	Demonstrate basic first aid skills including Cardiopulmonary resuscitation (CPR) and the Heimlich maneuver.
	07.05	Recognize the need for personal comfort measures to include skin care, bed bath, bed making, and mouth care.
	07.06	Show an awareness of safe patient transfer techniques.
	07.07	Recognize the importance of instructions to patients in safe use of assisting devices.
08.0	Demonstrate occupational safety–The student will be able to:	
	08.01	Discuss occupational safety issues that relate to the employer, employee, and the patient in the health care setting.

CTE Standards and Benchmarks	
08.02	Demonstrate health safety habits that will prevent injury to health care workers, co-workers, and patients.
08.03	Show an awareness of the importance of identifying poisons and hazardous materials commonly found in the workplace.
08.04	Describe the importance of fire safety including prevention and evacuation.

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

Special projects that are related to each occupational cluster are provided, including role playing activities related to specific careers, visualizing x-rays and crutch-walking, operating the microscope, and specific lab procedures. Team teaching and integration of the curriculum with English, Math and Science is encouraged.

Guest speakers from industry and related field trips make important contributions to the effectiveness of this course.

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Florida Department of Education
Curriculum Framework

Program Title: **Pharmacy Technician (Secondary)**
Program Type: **Career Preparatory**
Career Cluster: **Health Science**

Secondary – Career Preparatory	
Program Number	8418200
CIP Number	0317050705
Grade Level	9-12, 30, 31
Standard Length	7 credits
Teacher Certification	PHARMACY 7 G
CTSO	HOSA: Future Health Professionals, Skills USA
SOC Codes (all applicable)	29-2052 Pharmacy Technicians 31-9095 Pharmacy Aides
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

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 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.

The following table illustrates the secondary program structure:

OCP	Course Number	Course Title	Length	SOC Code	Level	Graduation Requirement
A	8418210	Pharmacy Technician 1	1 credit	31-9099	2	VO
	8418220	Pharmacy Technician 2	1 credit	29-2052	2	VO
	8418230	Pharmacy Technician 3	1 credit	29-2052	2	VO
	8418240	Pharmacy Technician 4	1 credit	29-2052	2	VO
	8418250	Pharmacy Technician 5	1 credit	29-2052	2	VO
	8418260	Pharmacy Technician 6	1 credit	29-2052	2	VO
B	8418270	Pharmacy Technician 7	1 credit	29-2052	2	VO

Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

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. It is important to note that the 6-12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them.

This curriculum framework incorporates the grades 9-10 reading and writing literacy standards in the first two courses of this CTE program and grade 11-12 reading and writing literacy standards in the third and fourth courses of this CTE program. The standards for Mathematical Practices 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. This curriculum framework incorporates the appropriate mathematical practices in the first four courses of this CTE program.

Regulated Programs

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   Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Pharmacy Technician.
02.0   Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Pharmacy Technician.
03.0   Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.
04.0   Demonstrate knowledge of the healthcare delivery system and health occupations.
05.0   Demonstrate the ability to communicate and use interpersonal skills effectively.
06.0   Demonstrate legal and ethical responsibilities.
07.0   Demonstrate an understanding of and apply wellness and disease concepts.
08.0   Recognize and practice safety and security procedures.
09.0   Recognize and respond to emergency situations.
10.0   Recognize and practice infection control procedures.
11.0   Demonstrate an understanding of information technology applications in healthcare.
12.0   Demonstrate employability skills.
13.0   Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
14.0   Apply basic math and science skills.
15.0   Practice human relation skills.
16.0   Identify pharmaceutical abbreviations and terminology as related to community pharmacy practice.
17.0   Identify medical and legal considerations
18.0   Perform clerical duties as related to Pharmacy Practice.
19.0   Demonstrate knowledge of basic pharmaceutical chemistry and drug classification as it relates to the human physiology.
20.0   Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Pharmacy Technician.
21.0   Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Pharmacy Technician.
22.0   Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.
23.0   Demonstrate knowledge of inventory control.
24.0   Initiate measurement and calculating techniques as it relates to compounding in pharmacy practice.
25.0   Demonstrate a basic knowledge of pharmaceutical chemistry as it relates to the human physiology.
26.0   Prepare and deliver medications.
27.0   Prepackage unit dose medications.
28.0   Prepare 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.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Pharmacy Technician.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. LAFS.910.RST.2.4	

	01.02.2	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).
		LAFS.910.RST.2.5
	01.02.3	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
		LAFS.910.RST.2.6
01.03	Integration of Knowledge and Ideas	
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
		LAFS.910.RST.3.7
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
		LAFS.910.RST.3.8
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.
		LAFS.910.RST.3.9
01.04	Range of Reading and Level of Text Complexity	
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently.
		LAFS.910.RST.4.10
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Pharmacy Technician.	
02.01	Text Types and Purposes	
	02.01.1	Write arguments focused on discipline-specific content.
		LAFS.910.WHST.1.1
	02.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
		LAFS.910.WHST.1.2
02.02	Production and Distribution of Writing	
	02.02.1	Produce clear and coherent writing in which the development,

Florida Standards		Correlation to CTE Program Standard #
	organization, and style are appropriate to task, purpose, and audience. LAFS.910.WHST.2.4	
02.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.910.WHST.2.5	
02.02.3	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. LAFS.910.WHST.2.6	
02.03	Research to Build and Present Knowledge	
02.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.910.WHST.3.7	
02.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. LAFS.910.WHST.3.8	
02.03.3	Draw evidence from informational texts to support analysis, reflection, and research. LAFS.910.WHST.3.9	
02.04	Range of Writing	
02.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.910.WHST.4.10	
03.0	Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.	
03.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
03.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
03.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	

Florida Standards	Correlation to CTE Program Standard #
03.04 Model with mathematics. MAFS.K12.MP.4.1	
03.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
03.06 Attend to precision. MAFS.K12.MP.6.1	
03.07 Look for and make use of structure. MAFS.K12.MP.7.1	
03.08 Look for and express regularity in repeated reasoning. MAFS.K12.MP.8.1	

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
04.0 Demonstrate knowledge of the health care delivery system and health occupations. – The student will be able to:		SC.912.L.16.10
04.01 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	
04.02 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	
04.03 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
04.04	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	
04.05	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	
04.06	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	
04.07	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	
04.08	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	
04.09	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	
04.10	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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.RI.1.3	
04.11 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	
04.12 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	
04.13 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	
05.0 Demonstrate the ability to communicate and use interpersonal skills effectively. – The student will be able to:		SC.912.N.1.1
05.01 Develop basic speaking and active listening skills.	LAFS.910.SL.1.1 LAFS.910.SL2.4 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	
05.02 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 LAFS.910.W.2.4 LAFS.910.SL2.4 LAFS.910.SL.2.6 LAFS.1112.SL1.1 LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.RI.3.7 LAFS.1112.W.3.9 LAFS.1112.W.2.4 LAFS.1112.L.1.1	
05.03 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	
05.04 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	
05.05 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	
05.06 Use appropriate medical terminology and abbreviations.	LAFS.910.L.3.6 LAFS.1112.L.3.6	
05.07 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	
05.08 Recognize the importance of patient/client educations regarding healthcare.	LAFS.1112.L.1.1 LAFS.1112.SL1.1 LAFS.1112.SL.1.3	
05.09 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	
05.10 Analyze elements of communication using a sender-receiver model.	LAFS.910.SL.1.1d LAFS.1112.SL.1.1d LAFS.1112.W.2.5 LAFS.1112.RI.1.1	
05.11 Distinguish between and report subjective and objective information.	LAFS.1112.RI.1.1 LAFS.1112.SL.1.1d	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.SL.2.4	
05.12 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	
06.0 Demonstrate legal and ethical responsibilities. – The student will be able to:		SC.912.L.16.10 SC.912.N.1.1
06.01 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	
06.02 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	
06.03 Demonstrate procedures for accurate documentation and record keeping.	LAFS.1112.W.2.6	
06.04 Interpret healthcare facility policy and procedures.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2 LAFS.1112.RI.3.8	
06.05 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	
06.06 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	
06.07 Describe advance directives.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.11112.RI.1.1 LAFS.1112.L.3.6	
06.08 Describe informed consent.	LAFS.910.W.1.2d LAFS.1112.W.1.2d LAFS.1112.RI.1.1	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS.1112.L.3.6	
06.09 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 LAFS1112.SL.1.2	
06.10 Differentiate between legal and ethical issues in healthcare.	LAFS.910.RI.3.8 LAFS.1112.SL.1.2 LAFS.1112.RI.3.8	
06.11 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	
06.12 Identify and compare personal, professional, and organizational ethics.	LAFS.1112.RI.1.3	
06.13 Recognize the limits of authority and responsibility of health care workers including legislated scope of practice	LAFS.1112.RI.1.1	
06.14 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	
06.15 Recognize and report abuse including domestic violence and neglect.	LAFS.1112.RI.1.1 LAFS.1112.W.2.4 LAFS.1112.SL.2.4	
06.16 Distinguish among the five schedules of controlled substances.	LAFS.910.RI.1.2 LAFS.1112.RI.1.2	
07.0 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
07.01 Describe strategies for prevention of diseases including health screenings and examinations.	LAFS.910.W.1.3 LAFS.910.SL.2.4 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	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
	LAFS1112.RI.1.1	
07.02 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	
07.03 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	
07.04 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	
07.05 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	
07.06 Explain the basic concepts of positive self image, wellness and stress.	LAFS.1112.SL.1.1c	
07.07 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	
07.08 Explore and utilize the U.S. Department of Agriculture's MyPlate food guide (www.choosemyplate.gov).	LAFS.1112.RI.3.8	
07.09 Recognize the steps in the grief process.		
08.0 Recognize and practice safety and security procedures. – The student will be able to:		SC.912.N.1.1 SC.912.N.1.6
08.01 Recognize safe and unsafe working conditions and report safety hazards.	LAFS.1112.W.4.10	
08.02 Demonstrate the safe use of medical equipment.	LAFS.1112.SL.1.1	
08.03 Explain and apply the theory of root- cause analysis	LAFS.1112.SL.2.6	
08.04 Identify and describe methods in medical error reduction and prevention in the various healthcare settings.	LAFS.1112.RI.1.1	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	08.05 Identify and practice security procedures for medical supplies and equipment.	LAFS.1112.RI.3.8	
	08.06 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	
	08.07 Recognize Materials Data Safety Sheets (MSDS) and comply with safety signs, symbols and labels.	LAFS.1112.RI.3.7	
	08.08 Demonstrate proper body mechanics and ergonomics.	LAFS.1112.SL.2.4	
	08.09 Demonstrate the procedure for properly identifying patients.	LAFS.1112.SL.2.4	
	08.10 Demonstrate procedures for the safe transport and transfer of patients.	LAFS.1112.SL.2.4	
	08.11 Describe fire, safety, disaster and evacuations procedures.	LAFS.1112.L.1.1 LAFS.1112.RI.1.1	
	08.12 Discuss The Joint commission patient safety goals (www.jointcommission.org)	LAFS.1112.RI.3.7	
09.0	Recognize and respond to emergency situations. – The student will be able to:		SC.912.N.1.1
	09.01 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	
	09.02 Describe legal parameters relating to the administration of emergency care.	LAFS.1112.L.1.1 LAFS.1112.RI.3.8	
	09.03 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	
	09.04 Recognize adverse drug related emergencies and take appropriate first aid action.		
10.0	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
	10.01 Define principles of infection control including standard and transmission based precautions.	LAFS.1112.L.3.4a, c	
	10.02 Demonstrate knowledge of medical asepsis and practice procedures such as hand-washing and isolation.	LAFS.1112L.3.4d LAFS.1112.SL.2.4	

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
10.03 Demonstrate knowledge of surgical asepsis.	LAFS.1112I.3.4d LAFS.1112.SL.2.4	
10.04 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	
11.0 Demonstrate an understanding of information technology applications in healthcare. – The student will be able to:		SC.912.N.1.1
11.01 Describe technology applications in healthcare.	LAFS.1112.SL.1.2	
11.02 Define terms and demonstrate basic computer skills.	LAFS.1112.L.3.6	
11.03 Recognize technology applications in healthcare.		
11.04 Interpret information from electronic medical documents.	LAFS.1112.SL.2.5 MAFS.912.S-IC.2.6	
11.05 Identify methods of communication to access and distribute data such as fax, e-mail and internet.		
12.0 Demonstrate employability skills. – The student will be able to:		
12.01 Identify personal traits or attitudes desirable in a member of the healthcare team.		
12.02 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	
12.03 Identify documents that may be required when applying for a job.		
12.04 Write an appropriate resume.	LAFS.1112.W.2.5 LAFS.1112.W.2.6 LAFS.1112.W.3.8	
12.05 Conduct a job search.	LAFS.1112.W.3.8	
12.06 Complete a job application form correctly.	LAFS.1112.W.2.5 LAFS.1112.W.2.6	
12.07 Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.	LAFS.1112.W.3.9b	
12.08 Recognize levels of education, credentialing requirements, employment opportunities, workplace environments and career growth potential.	LAFS.1112.W.3.9b	
12.09 Identify acceptable work habits.		
12.10 Recognize appropriate affective/professional behavior.		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	12.11 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	
13.0	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
	13.01 Recognize emerging diseases and disorders	MAFS.912.S-IC.1.1 MAFS.912.S-ID.2.5 MAFS.912.S-ID.3.9	
	13.02 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	
	13.03 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.	LAFS.1112.W.3.7	
	13.04 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	
	13.05 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	
	13.06 Demonstrate knowledge of the legal aspects of HIV/AIDS, including testing.	LAFS.1112.RI.3.8	
14.0	Apply basic math and science skills. – The student will be able to:		SC.912.N.1.1
	14.01 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	
	14.02 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	
	14.03 Make, use and convert using both traditional and metric units.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.2 MAFS.912.N-Q.1.3	
	14.04 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	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci
	14.05 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	
	14.06 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	
	14.07 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	
	14.08 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	
	14.09 Calculate ratios.		
15.0	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
	15.01 Explore the meaning and duties of a pharmacy technician.		
	15.02 Explore the organizational flow of responsibilities within a pharmacy setting.		
	15.03 Understand the importance of developing and maintaining a professional rapport with co-workers.		
	15.04 Identify pharmacy organizations and there role in the profession.		
	15.05 Demonstrate an understanding of Continuing Education (CE) requirements for pharmacy technicians and how to obtain them.		
	15.06 Identify the current trends and perspectives in the pharmacy practice.		
	15.07 Identify the means by which the application of team building can facilitate change within the pharmacy working environment.		
16.0	Identify pharmaceutical abbreviations and terminology as related to community pharmacy practice--The student will be able to:		
	16.01 Use pharmaceutical medical terminology.		

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci
16.02 Define the major symbols and abbreviations used on prescriptions and state the meaning.		

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.

Florida Standards	Correlation to CTE Program Standard #
01.0 Methods and strategies for using Florida Standards for grades 09-10 reading in Technical Subjects for student success in Pharmacy Technician.	
01.01 Key Ideas and Details	
01.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. LAFS.910.RST.1.1	
01.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.910.RST.1.2	
01.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.910.RST.1.3	
01.02 Craft and Structure	
01.02.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. LAFS.910.RST.2.4	
01.02.2 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). LAFS.910.RST.2.5	
01.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.	

Florida Standards			Correlation to CTE Program Standard #
		LAFS.910.RST.2.6	
	01.03	Integration of Knowledge and Ideas	
	01.03.1	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	
		LAFS.910.RST.3.7	
	01.03.2	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.	
		LAFS.910.RST.3.8	
	01.03.3	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.	
		LAFS.910.RST.3.9	
	01.04	Range of Reading and Level of Text Complexity	
	01.04.1	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	
	01.04.2	By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently.	
		LAFS.910.RST.4.10	
02.0	Methods and strategies for using Florida Standards for grades 09-10 writing in Technical Subjects for student success in Pharmacy Technician.		
	02.01	Text Types and Purposes	
	02.01.1	Write arguments focused on discipline-specific content.	
		LAFS.910.WHST.1.1	
	02.01.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	
		LAFS.910.WHST.1.2	
	02.02	Production and Distribution of Writing	
	02.02.1	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	
		LAFS.910.WHST.2.4	
	02.02.2	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	
		LAFS.910.WHST.2.5	
	02.02.3	Use technology, including the Internet, to produce, publish, and update	

Florida Standards	Correlation to CTE Program Standard #
individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. LAFS.910.WHST.2.6	
02.03 Research to Build and Present Knowledge	
02.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.910.WHST.3.7	
02.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. LAFS.910.WHST.3.8	
02.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.910.WHST.3.9	
02.04 Range of Writing	
02.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.910.WHST.4.10	
03.0 Methods and strategies for using Florida Standards for grades 09-10 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.	
03.01 Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
03.02 Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
03.03 Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
03.04 Model with mathematics. MAFS.K12.MP.4.1	
03.05 Use appropriate tools strategically. MAFS.K12.MP.5.1	
03.06 Attend to precision. MAFS.K12.MP.6.1	
03.07 Look for and make use of structure.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.7.1	
03.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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 Identify medical and legal considerations--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
17.01 Articulate the significance and scope of current national and Florida law and administrative rules as they relate to the practice of the pharmacy technician.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.02 Convey an understanding of medical legal concepts as they relate to the practice of the pharmacy technician.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.03 Explain the need for accurate pharmacy documentation and recordkeeping.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.04 Justify the importance of HIPAA in pharmacy practice.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.05 Convey an understanding the patient's Bill of Rights as it relates to pharmacy.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.06 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	
17.07 Compare and contrast between controlled substances and their applicable regulations.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.08 Convey an understanding of the Florida Right to Know Act with respect to hazardous materials.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.09 Implement appropriate patient safety goals by applicable accrediting and regulatory organizations.	LAFS.910.RI.3.8, LAFS.910.RI.3.9	
17.10 Understand and explain the legal requirements for final check by the pharmacist		
17.11 Classify activities performed by pharmacy professionals as those that may be		

	performed by pharmacy technicians and those that must be performed by licensed pharmacists. For each activity, explain the rationale for the classification.		
18.0	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
18.01	Design and evaluate pharmacy dispensing processes step-by-step in retail practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors.		
18.02	Demonstrate computer applications in processing pharmacy prescription data.	LAFS.910.SL.1.2	
18.03	Identify applications of E-Prescribing and facsimile.		
18.04	Utilize and apply interactive communication skills while gathering of accurate information from patients and from other healthcare professionals		
18.05	Identify communication modalities that can result in the transmission of inaccurate information, and explain specific ways to make improvements		
18.06	Create, complete and maintain patient profiles.		
18.07	Demonstrate telephone communication skills and routine inquiries.	LAFS.910.SL.1.1C	
18.08	Convey an understanding appropriate practice standards pertaining to patient counseling.	LAFS.910.SL.1.1C	
18.09	Demonstrate the knowledge of systems used in maintaining pharmacy records.	LAFS.910.W.2.6	
18.10	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prescription processing.		
19.0	Demonstrate knowledge of basic pharmaceutical chemistry and drug classification as it relates to the human physiology--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
19.01	Define the major classifications of pharmaceuticals.	LAFS.910.L.3.6	

19.02	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	
19.03	Analyze pharmacy reference manuals and web sites.		
19.04	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.

Florida Standards	Correlation to CTE Program Standard #
20.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Pharmacy Technician.	
20.01 Key Ideas and Details	
20.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
20.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
20.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
20.02 Craft and Structure	
20.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
20.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
20.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. LAFS.1112.RST.2.6	

Florida Standards	Correlation to CTE Program Standard #
20.03 Integration of Knowledge and Ideas	
20.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
20.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
20.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
20.04 Range of Reading and Level of Text Complexity	
20.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
20.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
21.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Pharmacy Technician.	
21.01 Text Types and Purposes	
21.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
21.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
21.02 Production and Distribution of Writing	
21.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
21.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	
21.02.3 Use technology, including the Internet, to produce, publish, and update	

Florida Standards			Correlation to CTE Program Standard #
		individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
	21.03	Research to Build and Present Knowledge	
	21.03.1	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
	21.03.2	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
	21.03.3	Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
	21.04	Range of Writing	
	21.04.1	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
22.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.		
	22.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
	22.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
	22.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
	22.04	Model with mathematics. MAFS.K12.MP.4.1	
	22.05	Use appropriate tools strategically. MAFS.K12.MP.5.1	
	22.06	Attend to precision. MAFS.K12.MP.6.1	
	22.07	Look for and make use of structure.	

Florida Standards		Correlation to CTE Program Standard #
	MAFS.K12.MP.7.1	
22.08 Look for and express regularity in repeated reasoning.		
	MAFS.K12.MP.8.1	

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
23.0 Demonstrate knowledge of inventory control--The student will be able to:		SC.912.L.17.14 SC.912.N.1.1
23.01 Convey an understanding of industry standards in purchasing pharmaceutical supplies.	LAFS.1112.RI.3.7	
23.02 Maintain controlled substance inventory.	LAFS.1112.RI.3.7	
23.03 Display knowledge of prescription pricing systems used in pharmacy.	LAFS.1112.W.2.4 LAFS.1112.W.2.6	
23.04 Maintain stock inventory, communicate shortages and seek alternatives.	LAFS.1112.SL.1.2	
23.05 Prepare electronic purchase orders.	LAFS.1112.SL.2.4	
23.06 Accurately perform the process of purchasing, receiving, storing, distributing and disposing of pharmaceutical supplies.	LAFS.1112.W.37 LAFS.1112.SL.2.6	
23.07 Convey an understanding of industry standards in management of Investigational Drugs.	LAFS.1112.W.3.7 LAFS.1112.SL.2.6	
24.0 Initiate measurement and calculating techniques as it relates to 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
24.01 Convey an understanding of United States Pharmacopeia (USP) 795 standards.	LAFS.1112.RI.3.7	
24.02 Convert measurements within the apothecary, avoirdupois, household and metric systems.	MAFS.912.N-Q.1.1	
24.03 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	
24.04 Use common pharmaceutical weighing equipment.		

24.05	Use common pharmaceutical volume measurement equipment.	LAFS.1112.L.3.4C MAFS.912.N-Q.1.3	
24.06	Explain the technique of preparing common pharmaceutical compounds.	LAFS.1112.W.1.3A,B,C,E MAFS.912.A-REI.3.6	
24.07	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.

Florida Standards	Correlation to CTE Program Standard #
20.0 Methods and strategies for using Florida Standards for grades 11-12 reading in Technical Subjects for student success in Pharmacy Technician.	
20.01 Key Ideas and Details	
20.01.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. LAFS.1112.RST.1.1	
20.01.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. LAFS.1112.RST.1.2	
20.01.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. LAFS.1112.RST.1.3	
20.02 Craft and Structure	
20.02.1 Determine the meaning of symbols key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. LAFS.1112.RST.2.4	
20.02.2 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. LAFS.1112.RST.2.5	
20.02.3 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	

Florida Standards	Correlation to CTE Program Standard #
LAFS.1112.RST.2.6	
20.03 Integration of Knowledge and Ideas	
20.03.1 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g. quantitative data, video, multimedia) in order to address a question or solve a problem. LAFS.1112.RST.3.7	
20.03.2 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. LAFS.1112.RST.3.8	
20.03.3 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. LAFS.1112.RST.3.9	
20.04 Range of Reading and Level of Text Complexity	
20.04.1 By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	
20.04.2 By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently. LAFS.1112.RST.4.10	
21.0 Methods and strategies for using Florida Standards for grades 11-12 writing in Technical Subjects for student success in Pharmacy Technician.	
21.01 Text Types and Purposes	
21.01.1 Write arguments focused on discipline-specific content. LAFS.1112.WHST.1.1	
21.01.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. LAFS.1112.WHST.1.2	
21.02 Production and Distribution of Writing	
21.02.1 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. LAFS.1112.WHST.2.4	
21.02.2 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. LAFS.1112.WHST.2.5	

Florida Standards		Correlation to CTE Program Standard #
	21.02.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. LAFS.1112.WHST.2.6	
21.03	Research to Build and Present Knowledge	
	21.03.1 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. LAFS.1112.WHST.3.7	
	21.03.2 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. LAFS.1112.WHST.3.8	
	21.03.3 Draw evidence from informational texts to support analysis, reflection, and research. LAFS.1112.WHST.3.9	
21.04	Range of Writing	
	21.04.1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. LAFS.1112.WHST.4.10	
22.0	Methods and strategies for using Florida Standards for grades 11-12 Mathematical Practices in Technical Subjects for student success in Pharmacy Technician.	
22.01	Make sense of problems and persevere in solving them. MAFS.K12.MP.1.1	
22.02	Reason abstractly and quantitatively. MAFS.K12.MP.2.1	
22.03	Construct viable arguments and critique the reasoning of others. MAFS.K12.MP.3.1	
22.04	Model with mathematics. MAFS.K12.MP.4.1	
22.05	Use appropriate tools strategically. MAFS.K12.MP.5.1	
22.06	Attend to precision. MAFS.K12.MP.6.1	

Florida Standards		Correlation to CTE Program Standard #
22.07 Look for and make use of structure.	MAFS.K12.MP.7.1	
22.08 Look for and express regularity in repeated reasoning.	MAFS.K12.MP.8.1	

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
25.0 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
25.01 Predict physical and chemical incompatibilities utilizing chemistry properties.		
25.02 Describe electrolyte balances.	LAFS.1112.W.1.2A-F	
25.03 Relate the general sources, classes, indications, actions, routes and side effects of drugs.	LAFS.1112.W.2.4 LAFS.1112.RI.1.3	
25.04 Demonstrate an understanding of common adult doses of medications and respective contraindications.	LAFS.1112.RI.3.7 LAFS.1112.W.2.4 LAFS.1112.W.1.2B	

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
26.0 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
26.01	Read and prepare medication orders correctly.	LAFS.1112.W.2.6 LAFS.1112.W.2.4 MAFS.912.A-REI.3.6	
26.02	Design and evaluate pharmacy dispensing processes step-by-step in institutional practice, identifying steps that may result in medication errors and explaining how the processes can be modified to prevent such errors		
26.03	Check all new orders with medications listed on profiles while noting any discrepancies.	LAFS.1112.W.2.6 LAFS.1112.W.2.4	
26.04	Utilize special precautions in the preparation of medications for pediatric patients.	LAFS.1112.RI.1.3	
26.05	Transport medications safely being aware of hazards: theft, legal implications of accidental loss, and other consequences.		
26.06	Demonstrate the proper technique of preparing pharmaceutical compounds.	LAFS.1112.RI.3.7	
26.07	Demonstrate the ability to correctly fill and deliver medication cassettes.	LAFS.1112.RI.3.7	
26.08	Collect data from medication administration record and drug use and evaluation form.	LAFS.1112.RI.3.7	
26.09	Demonstrate use of automated medication dispensing equipment.	LAFS.1112.RI.3.7	
27.0	Prepackage 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
27.01	Locate correct stock container.		
27.02	Measure, count required individual doses of medication.	MAFS.912.A-REI.3.6	
27.03	Label with required information utilizing "tall man" lettering.	LAFS.1112.W.2.4 LAFS.1112.RI.1.2	
27.04	Operate unit dose packaging equipment.	MAFS.912.N-Q.1.1 MAFS.912.N-Q.1.3	

27.05	Place individual dose in appropriate containers, prepackage in predetermined quantities.	LAFS.1112.RI.1.2	
27.06	Prepackage unit dose hazardous drugs.	LAFS.1112.RI.1.2	
27.07	Record prepackaged medication data correctly.		
27.08	Summarize, evaluate and describe the role of the technician in quality assurance activities as related to prepackaging 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
28.0 Prepare 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
28.01 Convey an understanding of United States Pharmacopeia (USP) 797 regulations.	LAFS.1112.RI.3.8	
28.02 Compare medication order with label on vial and check expiration date of product.		
28.03 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	
28.04 Articulate common drug incompatibilities.	LAFS.1112.W.3.7	
28.05 Reconstitute parenteral medications.	MAFS.912.N-Q.1.3 MAFS.912.A-REI.1.1 MAFS.912.A-REI.3.6	
28.06 Use aseptic techniques 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	
28.07 Use aseptic technique to withdraw medication from an ampule.	LAFS.1112.RI.1.3	
28.08 Prepare parenteral solutions and discuss current intravenous preparation industry trends.	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	
28.09 Perform the preparation of total Parenteral Nutrition 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	
28.10 Perform 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	
28.11 Utilize the appropriate technique while using specialized equipment such as: laminar flow hoods, filters, pumps, automated compounders, and barrier isolator.	LAFS.1112.RI.3.7 LAFS.1112.SL.1.2	

28.12	Place label on IV solution container and keep records.	LAFS.1112.RI.1.2	
28.13	Perform quality control check.	LAFS.1112.W.4.10	
28.14	Convey an understanding of storage requirements of reconstituted IV solutions.	LAFS.1112.RI.3.7	
28.15	Convey an understanding of the proper disposal of hazardous Drugs.		
28.16	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.

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.

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.

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

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 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.

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. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml