

**Florida Department of Education
Curriculum Framework**

Program Title: Hemodialysis Technician
Program Type: Career Preparatory
Career Cluster: Health Science

Career Certificate Program

Program Number	H170207
CIP Number	0351101100
Grade Level	30, 31
Standard Length	600 hours
Teacher Certification	Refer to the <u>Program Structure</u> section.
CTSO	HOSA: Future Health Professionals
SOC Codes (all applicable)	29-2099 Health Technologists and Technicians, All Other 31-9099 Healthcare Support Workers, All Other
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml
Basic Skills Level	Mathematics: 10 Language: 10 Reading: 10

Purpose

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

The content includes but is not limited to communication and interpersonal skills, legal and ethical responsibilities, renal health-illness concepts, hemodialysis skills, emergency procedures including CPR and first aid, safety and security procedures, medical terminology, anatomy and physiology, and employability skills.

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

Program Structure

This program is a planned sequence of instruction consisting of 2 occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

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

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	HSC0003	Basic Healthcare Worker	REG NURSE 7 G	90 hours	31-9099
B	MLT0368	Dialysis Technician 1	HEMO TEC 7 G	255 hours	29-2099
	MLT0369	Dialysis Technician 2	PRAC NURSE @7 %7%G (Must be a Registered Nurse)	255 hours	

Common Career Technical Core – Career Ready Practices

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

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

Standards

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

- 01.0 Demonstrate knowledge of the healthcare delivery system and health occupations.
- 02.0 Demonstrate the ability to communicate and use interpersonal skills effectively.
- 03.0 Demonstrate legal and ethical responsibilities.
- 04.0 Demonstrate an understanding of and apply wellness and disease concepts.
- 05.0 Recognize and practice safety and security procedures.
- 06.0 Recognize and respond to emergency situations.
- 07.0 Recognize and practice infection control procedures.
- 08.0 Demonstrate an understanding of information technology applications in healthcare.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including HIV/AIDS.
- 11.0 Apply basic math and science skills.
- 12.0 Demonstrate accepted professional, communication and interpersonal skills specific to the dialysis setting.
- 13.0 Identify normal and abnormal anatomic structure and function of body systems in relation to services performed by a Hemodialysis Technician.
- 14.0 Practice infection control following universal precautions.
- 15.0 Recognize and demonstrate knowledge of how to utilize equipment and supplies specific to dialysis.
- 16.0 Demonstrate skills and knowledge necessary to perform dialysis technician duties.
- 17.0 Practice accepted procedures of transporting specimens.
- 18.0 Practice quality assurance and safety.

**Florida Department of Education
Student Performance Standards**

**Program Title: Hemodialysis Technician
Career Certificate Program Number: H17207**

The **Basic Health Care Worker (HSC0003)** is referred to as the **Health Science Core** and is the first OCP in the majority of the Career Certificate Program health science programs. Secondary and Postsecondary students completing the health science core will not have to repeat the core in any other health science program in which it is a part. When the recommended sequence is followed, the structure allows students to complete at specified points for employment or remain for advanced training or cross-training.

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

To ensure consistency whenever these courses are offered, the health science core standards (1-11) have been placed in a separate document. You can access the course standards and benchmarks by visiting this link:
<http://www.fldoe.org/core/fileparse.php/5655/urlt/health-sci-core-psav-cc.rtf>

**Course Number: MLT0368
Occupational Completion Point: B
Dialysis Technician 1 – 255 Hours – SOC Code 29-2099**

12.0 Demonstrate accepted professional, communication, and interpersonal skills specific to the dialysis setting. – The student will be able to:
12.01 Demonstrate knowledge of correct medical terminology related to dialysis.
12.02 Demonstrate ability to work as a member of the hemodialysis team.
12.03 Demonstrate knowledge of various professional organizations related to hemodialysis.
12.04 Recognize the importance of continuing education and renewal of certification.
12.05 Recognize and respond appropriately to request from or to other departments or health care team members.
12.06 Describe the role of other health team members who interact with the dialysis team.
13.0 Identify normal and abnormal anatomic structure and function of body systems in relation to services performed by a hemodialysis technician. – The student will be able to:
13.01 Demonstrate knowledge of basic structure of the kidney.

13.02	Demonstrate knowledge of basic physiology of the kidney including but not limited to filtration, diffusion, osmosis, and electrolyte interchange.
13.03	Recognize function of endocrine system as related to the kidney.
13.04	Describe interaction of other body systems related to dialysis.
13.05	Discuss diseases, including diagnosis, treatment, and signs and symptoms, which may lead to kidney failure and need for dialysis.
14.0	Practice infection control following standard precautions. – The student will be able to:
14.01	Demonstrate knowledge of how (when) to utilize personal protection equipment (PPE).
14.02	Demonstrate ability to recognize biohazardous waste storage and disposal, including, but not limited to isolation room waste.
14.03	Follow standard precautions, clean techniques and OSHA regulations appropriately
14.04	Label biohazardous waste correctly including date and location.
15.0	Recognize and demonstrate knowledge of how to utilize equipment and supplies specific to dialysis. – The student will be able to:
15.01	Demonstrate use of water quality instrumentation including, but not limited to pH meter, conductivity meter and chloramine meter.
15.02	Recognize supplies needed to conduct the hemodialysis treatment.
15.03	Demonstrate ability to conduct daily inventory of hemodialysis supplies including, but not limited to dialysis, blood lines, and sodium chloride.
15.04	Recognize necessity of keeping areas stocked for each staff.
Course Number: MLT0369	
Occupational Completion Point: B	
Dialysis Technician 2 – 255 Hours – SOC Code 29-2099	
16.0	Demonstrate skills and knowledge necessary to perform dialysis technician duties. – The student will be able to:
16.01	Demonstrate accurate documentation, machine trouble-shooting, and follow-up of whole patient hemodialysis treatment.
16.02	Recognize any visual changes in patient's behavior, hemodialysis machines and water room.
16.03	Demonstrate knowledge of how to document any variance while patient is being dialyzed including, but not limited to vital signs, machine's pava meters, and water room.
16.04	Demonstrate ability to cannulate, assess and confirm blood flow direction in patient's access; including, but not limited to signs of infection and patency.
17.0	Practice accepted procedures of transporting specimens. – The student will be able to:
17.01	Collect blood specimens utilizing correct drawing techniques, refrigeration, packing, and transportation.

17.02	Follow laboratory's policy and procedures (P and P) from collection of specimens to separation of blood form elements.
18.0	Practice quality assurance and safety. – The student will be able to:
18.01	Demonstrate how to follow-up physician's medical orders, including, but not limited to treatment length, blood flow rates, dialysis type and concentration.
18.02	Assist with maintenance of appropriate aseptic techniques (clean and/or sterile) during cannulation.
18.03	Recognize patient's target weight (TW) importance, and maximum ultra-filtration rate possible.
18.04	Describe patient's probable prognosis when dry weight is not reached.
18.05	Demonstrate patient safety practices as related to permanent monitor patient - machine.
18.06	Identify appropriate procedures and protocols to manage and correct common complications, including but not limited to, intradialytic hypotension, air embolisms, exsanguination (mass blood loss) and hemolysis.

Additional Information

Laboratory Activities

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

Hands on clinical experience should be provided as part of the program of study. Refer to specific certification exam eligibility requirements in relation to clinical experience.

Special Notes

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

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

State or Industry certification examinations are now part of the Centers of Medicare and Medicaid Services' (CMS) requirements and are available through several state and independent professional certification agencies:

Nephrology Nursing Certification Commission (NNCC) <http://www.nncc-exam.org>

The Board of Nephrology Examiners Nursing and Technology (BONENT) <http://www.bonent.org/examinations/cht.html>

Outcomes 01-11 are referred to as the Health Career Core and do not have to be completed if the student has previously completed the Core in another health occupations program at any level. The Core should be taken first or concurrently with the first course in the program. Following the successful completion of the core, the student is eligible to take the National Health Care Foundation Skill Standards Assessment with instructor approval and the completion of a portfolio.

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

Career and Technical Student Organization (CTSO)

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

Cooperative Training – OJT

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

Basic Skills

In a Career Certificate Program offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 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.

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>