

**Florida Department of Education
CLUSTER CURRICULUM FRAMEWORK**

Program Title: Hemodialysis Technician
Program Type: Job Preparatory
Occupational Area: Health Science Education
Components: Core, One Program, One Occupational Completion Point
 PSAV

Program Number H170207
 CIP Number 0317.020200
 Grade Level 30, 31
 Standard Length 600 Clock hours
 Certification PRAC NURSE @ 7 G
 Facility Code: HEMO TEC G REG NURSE G
 VSO: HOSA
 Coop Method: No
 Apprenticeship: No

Basic Skills

Math	10
Language	10
Reading	10

- I. **PURPOSE:** This program is designed to prepare students for employment as hemodialysis technicians or dialysis technicians SOC 29-2099 Health Technologists & Technicians, all others.

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.

Reinforcement of basic skills in English, mathematics, and science appropriate for the job preparatory programs occurs through vocational classroom instruction and applied laboratory procedures or practice.

This program 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.

- II. **CLUSTER STRUCTURE:** This program is a planned sequence of instruction consisting of 2 completion points.

III. THE FOLLOWING DIAGRAM ILLUSTRATES STRUCTURE

OCP B Hemodialysis Technician 510 Hours (Dialysis Technican) SOC Code 29-2099 (Health Technologist/Technicians, all other
OCP A Health Science Core 90 Hours SOC Code 31-9099 Healthcare Support workers, all others

Total Length of Program 600 Hours

IV. **LABORATORY ACTIVITIES:** Clinical/laboratory experiences are integrated with the didactic portion of the program.

V. **SPECIAL NOTE:** This program meets the Department of Health HIV/AIDS education requirements. Upon completion of this program, the instructor will provide a certificate to the student verifying that the HIV/AIDS requirements have been met.

Health Occupations Students of America, (HOSA)Inc., is the appropriate CSO (Career Student Organization) as well as participation in a career related professional organization for providing leadership training experiences and for reinforcing specific vocational skills. CSOs, when provided, shall be an integral part of the vocational instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065(8), FAC.

In accordance with Rule 6A-10.040, FAC, the minimum basic skills grade level required for this postsecondary adult vocational program is: Mathematics 10, Language 10, Reading 10. These grade level numbers correspond to a grade equivalent score obtained on one of the state designated basic skills examinations. If a student does not meet the basic skills level required for

To be transferable statewide between institutions, this program/course must have been reviewed, and a "transfer value" assigned the curriculum content by the appropriate Statewide Course Numbering System discipline committee. This does not preclude institutions from developing specific program or course articulation agreements with each other.

This program may be offered in courses. Vocational credit shall be awarded to the student on a transcript in accordance with Section 1001.44 F.S.

SCANS Competencies: Instructional strategies for this program must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment. Instructional

strategies must also incorporate the methods to improve students' personal qualities and high-order thinking skills.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify and request such services. 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.

Equipment List: A generic equipment list will be available for this program and can be requested from the Department of Education.

The standard length of the program is 600 clock hours which includes 90 clock hours for the core.

VI. INTENDED OUTCOMES:

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 internet certification examination (Nocti) with instructor approval and the completion of a portfolio.

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

HEALTH SCIENCE CORE (01-11) OCP A-Basic Healthcare Worker- SOC code 31-9099 Healthcare Support Workers, all others

- 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 computer literacy.
- 09.0 Demonstrate employability skills.
- 10.0 Demonstrate knowledge of blood borne diseases, including AIDS.
- 11.0 Apply basic math and science skills.

OCCUPATIONAL COMPLETION POINT - DATA CODE B(12.0 - 18.0)

Hemodialysis Technician SOC Code-29-2099

- 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 Recognize and demonstrate knowledge of how to utilize equipment and supplies specific to dialysis.
- 15.0 Demonstrate skills and knowledge necessary to perform dialysis technician duties.
- 16.0 Practice infection control following universal precautions.
- 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
Postsecondary Number: H17207

HEALTH SCIENCE CORE: The Health Science Core is a core of basic knowledge necessary for any health occupations career. Students who have previously completed the Health Career Core in any other health occupations program do not have to repeat intended outcomes 01-11. OCP A-Basic Healthcare Worker-Industry Title SOC code 31-9099 Healthcare Support Workers, all others

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.
- 01.02 Describe the various types of health care providers and the range of services available including resources to victims of domestic violence.
- 01.03 Describe the composition and functions of a health care team.
- 01.04 Identify the general roles and responsibilities of the individual members of the health care team.
- 01.05 Develop a basic understanding of human needs throughout the lifespan.
- 01.06 Explain the importance of maintaining professional competence through continuing education.
- 01.07 Describe trends affecting the delivery system of health care.

02.0 DEMONSTRATE THE ABILITY TO COMMUNICATE AND USE INTERPERSONAL SKILLS EFFECTIVELY -- The student will be able to:

- 02.01 Develop basic 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 using correct spelling, grammar, and format.
- 02.06 Use appropriate medical terminology and abbreviations.
- 02.07 Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
- 02.08 Recognize the importance of patient/client education regarding health care.
- 02.09 Adapt communication skills to varied levels of understanding and cultural orientation.
- 02.10 Demonstrate telephone usage including taking messages.
- 02.11 Demonstrate ability to give and follow directions.
- 02.12 Distinguish between factual reports and personal opinion.
- 02.13 Read and discuss technical material.

03.0 DEMONSTRATE LEGAL AND ETHICAL RESPONSIBILITIES -- The student will be able to:

- 03.01 Discuss the legal framework of the health care occupation.
- 03.02 Explain the medical liability of health care workers.
- 03.03 Explain the patients' "Bill of Rights."
- 03.04 Describe a Code of Ethics consistent with the health care occupation.
- 03.05 Discuss the importance of maintaining confidentiality of information, including computer information.
- 03.06 Recognize the limits of authority and responsibility of health care workers.
- 03.07 Recognize and report illegal and unethical practices of health care workers.
- 03.08 Recognize and report abuse and neglect.
- 03.09 Recognize sexual harassment and domestic violence.

04.0 DEMONSTRATE AN UNDERSTANDING OF 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 personal health practices and environmental factors which affect optimal function of each of the major body systems.
- 04.03 Identify psychological reactions to illness including defense mechanisms.
- 04.04 Recognize the steps in the grief process.
- 04.05 Explain basic concepts of positive self image, wellness and stress.
- 04.06 Develop a wellness and stress control plan that can be used in personal and professional life.
- 04.07 Explain the nutrition pyramid.
- 04.08 Discuss the adverse effects of the use of alcohol, illegal drugs and steroids on the human body.

05.0 RECOGNIZE AND PRACTICE SAFETY AND SECURITY PROCEDURES -- The student will be able to:

- 05.01 Demonstrate the safe use of medical equipment.
- 05.02 Recognize and report safety hazards.
- 05.03 Identify and practice security procedures for medical supplies and equipment.
- 05.04 Demonstrate proper body mechanics.
- 05.05 Demonstrate the procedure for properly identifying patients.
- 05.06 Demonstrate procedures for the safe transport and transfer of patients.
- 05.07 Describe fire safety and evacuation procedures.
- 05.08 Discuss JCAHO patient safety goals. (www.JCAHO.org)

06.0 RECOGNIZE AND RESPOND TO EMERGENCY SITUATIONS -- The student will be able to:

- 06.01 Monitor and record vital signs.

- 06.02 Describe legal parameters relating to the administration of emergency care.
 - 06.03 Attain and maintain CPR skills.
 - 06.04 Demonstrate basic understanding of first aid and emergency care.
 - 06.05 Recognize adverse drug related emergencies and take appropriate first aid action.
- 07.0 RECOGNIZE AND PRACTICE INFECTION CONTROL PROCEDURES -- The student will be able to:
- 07.01 Demonstrate knowledge of medical asepsis and practice procedures such as handwashing and isolation.
 - 07.02 Demonstrate knowledge of surgical asepsis as utilized in sterilization.
 - 07.03 Describe how to dispose correctly of biohazardous materials, according to appropriate government guidelines such as OSHA.
- 08.0 DEMONSTRATE COMPUTER LITERACY -- The student will be able to:
- 08.01 Define terms and demonstrate basic computer skills.
 - 08.02 Describe the uses of computers in health care.
- 09.0 DEMONSTRATE EMPLOYABILITY SKILLS -- The student will be able to:
- 09.01 Conduct a job search.
 - 09.02 Secure information about a job.
 - 09.03 Identify documents that may be required when applying for a job.
 - 09.04 Complete a job application form correctly.
 - 09.05 Demonstrate competence in job interview techniques.
 - 09.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
 - 09.07 Identify acceptable work habits.
 - 09.08 Demonstrate knowledge of how to make job changes appropriately.
 - 09.09 Demonstrate desirable health habits.
 - 09.10 Recognize appropriate affective/professional behavior.
 - 09.11 Write an appropriate resume.
- 10.0 DEMONSTRATE KNOWLEDGE OF BLOOD BORNE DISEASES, INCLUDING AIDS -- The student will be able to:
- 10.01 Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.
 - 10.02 Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
 - 10.03 Identify "at risk" behaviors which promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.
 - 10.04 Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.

10.05 Demonstrate knowledge of the legal aspects of AIDS, including testing.

11.0 APPLY BASIC MATH AND SCIENCE SKILLS -- The student will be able to:

- 11.01 Draw, read, and report on graphs, charts and tables.
- 11.02 Measure time, temperature, distance, capacity, and mass/weight.
- 11.03 Make and use measurements in both traditional and metric units.
- 11.04 Make estimates and approximations and judge the reasonableness of the result.
- 11.05 Convert from regular to 24 hour time.
- 11.06 Demonstrate ability to evaluate and draw conclusions.
- 11.07 Organize and communicate the results obtained by observation and experimentation.
- 11.08 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solution of such questions.
- 11.09 Calculate ratios.

OCCUPATIONAL COMPLETION POINT - DATA CODE B (12.0 - 18.0)

SOC 29-2099-Health Technologists/Technicians all other

After completion of competencies 12.0 - 18.0, the student will have reached OCP B - Hemodialysis Technician 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.
- 14.01 RECOGNIZE AND DEMONSTRATE KNOWLEDGE OF HOW TO UTILIZE EQUIPMENT AND SUPPLIES SPECIFIC TO DIALYSIS-- The student will be able to:
- 14.02 Demonstrate use of water quality instrumentation including, but not limited to pH meter, conductivity meter and chloramine meter.
 - 14.03 Recognize supplies needed to conduct the hemodialysis treatment.
 - 14.04 Demonstrate ability to conduct daily inventory of hemodialysis supplies including, but not limited to dialysis, blood lines, and sodium chloride.
 - 14.05 Recognize necessity of keeping areas stocked for each staff.
- 15.00 DEMONSTRATE SKILLS AND KNOWLEDGE NECESSARY TO PERFORM DIALYSIS TECHNICIAN DUTIES--The student will be able to:
- 15.01 Demonstrate accurate documentation, machine trouble-shooting, and follow-up of whole patient hemodialysis treatment.
 - 15.02 Recognize any visual changes in patients behavior, hemodialysis machines and water room.
 - 15.03 Demonstrate knowledge of how to document any variance while patient is being dialysed including, but not limited to vital signs, machine's pava meters and water room.
 - 15.04 Demonstrate ability to cannulate, assess and confirm blood flow direction in patient's access; including, but not limited to signs of infection and patency.
- 16.0 PRACTICE INFECTION CONTROL FOLLOWING UNIVERSAL PRECAUTIONS--The student will be able to:
- 16.01 Demonstrate knowledge of how (when) to utilize personal protection equipment (PPE).
 - 16.02 Demonstrate ability to recognize biohazardous waste storage and disposal, including, but not limited to isolation room waste.
 - 16.03 Follow universal precautions, clean techniques and OSHA regulations appropriately

16.04 Label biohazardous waste correctly including date and location.

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 dry weight (DW) importance, and maximum ultrafiltration 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 Recognize and report patient condition variances, including, but not limited to vital signs, presence of bloodline clots, air detectors on/off, blood pressure changes; appropriate clamping (lines).
- 18.07 Implement appropriate JCAHO patient safety goals.