Diagnostic Medicine

Tennessee 5994

This document provides the correlation between HealthCenter21 interactive e-learning curriculum, and the Diagnostic Medicine standards, published by the state of Tennessee.

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HealthCenter21 Template

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Legal and Ethical Responsibilities

Confidentiality Role Play
Civil and Criminal Law
Privacy and Security
Advance Directives and Client Rights
Liability and Ethics
Workplace Law
Reflection Questions and Discussion
Advanced Directives (Create a Living Will)
Ethics Debate
Code of Ethics
Scope of Practice
Current Event

Medical Terminology

Word Search Puzzle
Word Parts: Roots
Word Parts: Suffixes and Prefixes
Abbreviations
Anatomic References
Reflection Questions and Discussion
Worksheet & Crossword Puzzle
Current Event

Specimen Collection and Testing

Asking and Discussing Questions
Policies and Practices for Specimens
Collecting Urine Specimens
Straining and Testing Urine
Stool Specimen and Tests
Cultures and Smears
Reflection Questions and Discussion
Cleaning Experiment
Patient Care Scenarios
Current Event

Infection Control

Hand Washing
Introduction to Infection Control
Standard Precautions
Transmission-Based Precautions
Sterile Technique
Reflection Questions and Discussion
Hand Washing
Observing Microorganism Growth
Chain of Infection Poster
Current Event

Safety Precautions

Greet, Identify & Explain a Procedure
Body Mechanics
Safety Guidelines and Regulations
Environmental Safety
Reflection Questions and Discussion
Safety Guideline Poster
Current Event

Bloodborne Pathogens

Bloodborne Pathogens Misconceptions
HIV, AIDS, and Hepatitis
Standard Precautions
Bloodborne Pathogens Standard
Reflection Questions and Discussion
Bloodborne Health Brochure
Current Event

Anatomy and Physiology

Explore
Introduction to Anatomy and Physiology
Integumentary System
Skeletal System
Muscular System
Nervous System
Sensory System
Cardiovascular System
Lymphatic System
Respiratory System
Digestive System
Urinary System
Endocrine System
Reproductive System
Reflection Questions and Discussion
Informative Brochure
Body Function Worksheet
Current Event

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Phlebotomy

Proper Use and Care of Equipment
Introduction to Phlebotomy
Skin Puncture: Microhematocrit and Hemoglobin
Skin Puncture: Blood Glucose and PKU Test
Venipuncture
Reflection Questions and Discussion
Blood-Typing
Patient Care Scenarios
Current Event

Physical Exams

Use and Care of Lab Equipment
Introduction to Physical Exams
Eye and Ear Examinations
Physical Examinations
Gynecological and Obstetrical Exams
Reflection Questions and Discussion
Wellness Campaign
Current Event

A.	**Career Planning and Professionalism**	**1 / 2**
1)	Revise the career information portfolio developed in the Health Science Education course and update with more in-depth information surrounding careers in diagnostic sciences. Identify specific roles and responsibilities for each career in this field. Investigate and compare the range of skills, competencies, and professional traits required for such careers. Compare findings to current individual strengths and identify opportunities for personal development.	
2)	Summarize the Health Insurance Portability and Accountability Act (HIPAA), in particular those aspects related to maintaining confidentiality, patient rights, patient safety, and other ethical/legal directives governing medical treatment. Using medical terminology and accurate definitions of legal concepts, explain how the content of these ethical/legal ramifications affects patients' rights for all aspects of care.	Legal & Ethical Responsibilities Medical Terminology
B.	**Technology**	**1 / 4**
3)	Differentiate between telemedicine and telehealth. Identify the areas in which telehealth and/or telemedicine are being utilized nationally and globally with success. Describe in a written, verbal, or digital format what barriers currently exist to implementing such technologies on a larger scale, and outline any initiatives that can be incorporated to reduce the barriers.	
4)	Investigate and document the history of radiology, medical laboratories, and other related areas of diagnostic medicine. Explain how technology is influencing the future of each. Synthesize research from professional journals and other medical or technical literature (noting the authors and their purposes) to analyze the barriers to these technologies and predict how the industry might respond.	
5)	Synthesize information from professional journals and digital resources to investigate the use of robotics in healthcare other than in surgical procedures. Develop a proposal, sketch, mock press release, or similar written artifact for a new technology or an improvement to a current technology that can be used in the field of diagnostics. Detail all the specifications of the new technology, including an explanation of how the technology will be used, the projected cost-saving measures, and the most applicable professions that would use the technology.	
6)	Evaluate data from research articles encompassing the reliability of home testing kits (i.e., pregnancy test) and portable diagnostic equipment (i.e., glucometers). Explain findings in an informational essay, citing at least three different peer-reviewed articles and including appropriate medical terminology.	Specimen Collection & Testing

C.	Safety	1 / 3
7)	Obtain medical laboratory manuals from at least three different resources or physical laboratory sites. Identify the elements of containment regarding general infection control, chemistry precautions, fire safety, chemical hazards, electrical safety, mechanical safety, general lab safety, accident exposure, and disaster preparedness. Develop a written or digital lab manual for a medical laboratory at school based on findings from the research.	Infection Control Safety Precautions
8)	Research the guidelines pertaining to radiation safety for staff, patients, and family who are receiving any radiological procedure. Develop an informational artifact, public service announcement, or health education presentation that instructs patients/clients on what patients should know about medical radiation safety.	
9)	Explore policies and procedures related to diagnostic equipment quality control monitoring and evaluation. Synthesize information into a digital or written presentation to instruct appropriate staff on the importance of implementing quality control processes according to policy.	
D.	**Infection Control/Medical Microbiology**	**1 / 3**
10)	Demonstrate mastery of concepts and skills related to asepsis, Universal Precautions, sanitation, disinfection, and sterilization for patient/client care settings in adherence to standards and guidelines from the Centers for Disease Control and Prevention (CDC) and the Occupational Safety and Health Administration (OSHA) in a lab/clinical setting.	Bloodborne Pathogens Infection Control
11)	Define the term normal flora and explain how its deviation can prevent or cause a disease or disorder. Outline specific preventive measures to align to acceptable standards of care in the healthcare field.	
12)	Assess the differences between healthcare-associated infections and non-healthcare-associated infections using examples drawn from mock patient documents or case studies. Support explanations with relevant surveillance statistics, preventive measures, and methodologies concerning outbreak detection, management, and education.	
Diagnostic	**Radiology**	**1 / 5**
13)	Outline the in-depth normal structure and function of the musculoskeletal, nervous, and respiratory systems, specifically as they relate to radiology. Review directions, planes, and sections of the body in order to perform radiographic images. Summarize appropriate medical text(s) in order to list signs and symptoms of common diseases and disorders associated with each.	Anatomy & Physiology Medical Terminology

14)	Distinguish between the various types of diagnostic radiology, citing the uses, advantages, and disadvantages of each. Develop an explanation that would be used for beginning health science students, incorporating appropriate industry and medical terminology.	
15)	Research the principles of radiographic physics and explain how the concepts are applied to produce high-quality radiographic images. Discuss the following in the explanation: a. Electromagnetic spectrum and ionizing radiation; b. Properties of X-rays; c. Production of X-rays; d. The X-ray tube and other parts of an X-ray machine; e. Factors affecting the quality and intensity of beam; f. Interaction of X-rays with matter	
16)	Identify the equipment used in radiographic imaging. Describe in a written, oral, or digital format the following: a. Properties of a radiographic film and the process related to the formation of a radiographic image; b. Effects of exposure factors on the film; c. Uses of cassettes and intensity screens; d. Implications of these and other considerations on the quality of a diagnostic radiograph	
17)	Understand principles of and successfully perform interpretation skills for radiographic images, incorporating rubrics from textbooks or clinical standards of practice. Identify any anatomical abnormalities and document findings per industry standards related to terminology and format.	
E.	**Clinical Laboratory**	**1 / 3**
18)	Outline the in-depth normal structure and function of blood and related components. Summarize appropriate medical text(s) in order to list signs and symptoms of common blood diseases and disorders associated with each. Define the following common laboratory procedures, both normal and abnormal, and provide the reasoning for why the test should be obtained: a. Complete Blood Count; b. Complete Metabolic Panel; c. Fasting Lipid Panel; d. Hgb A1C	
19)	Develop a graphic organizer or concept map to explain the functions of the various departments of a medical laboratory, such as microbiology, chemistry, hematology, blood banking, and urology. Include types of fluid samples and test that are performed in each area with a detail of the precautions involved when handling each.	
20)	Understand principles of and successfully perform skills of a phlebotomist, incorporating rubrics from National HOSA, textbooks, or clinical standards of practice. a. Distinguish sites and/or veins for blood draws in all populations using the required equipment and safety precautions.; b. Perform collection procedures for microspecimens and venipuncture on a mannequin using appropriate collection containers and identifying factors affecting collection/test results.; c. Provide guidelines for obtaining blood from neonates, pediatrics, and geriatrics.; d. Perform skills of patient/specimen identification and transporting of specimens.	Phlebotomy

F.	Ophthalmological Procedures	3 / 4
21)	Outline the in-depth normal structure and function of the eye. Summarize appropriate medical text(s) in order to list signs and symptoms of common diseases and disorders associated with each.	Anatomy & Physiology Physical Exams
22)	Understand principles of and successfully perform skills related to basic ophthalmic examination, incorporating rubrics from textbooks or clinical standards of practice. Measure pulse and blood pressure, and conduct a history and physical, especially concerning areas related to the eye.	Physical Exams
23)	Research the concepts surrounding measurement of visual acuity with associated equipment, and explain corrective measures for abnormalities (i.e., surgery, glasses, or contacts). Specify what measures should be used with each abnormality.	Physical Exams
24)	Develop a policy and procedure guide for a clinic dealing with frame dispensing, frame alignment and adjustment, and use of a lensometer. Perform skills of assisting a patient to choose the correct frames and correctly adjust for optimal wear.	
G.	**Special Studies/Procedures**	**0 / 2**
25)	Compare and contrast the costs of basic and advanced procedures in each of the following areas of diagnostic medicine: radiological, medical laboratory, diagnostic cardiovascular, gastrointestinal, and respiratory. Explain the purpose for each procedure and distinguish among situations in which a diagnostician would recommend an advanced procedure versus situations in which the basic procedure would be sufficient. Justify the need for the more advanced procedure as would a diagnostician explaining options to a paying patient.	
26)	Generate a digital or written artifact explaining the diagnostic procedures related to gastrointestinal, cardiovascular, pulmonary, and neurological disorders. Include in the explanation the anatomy involved with the procedure, the type of procedure (i.e., invasive or non-invasive), the reason for the procedure, the healthcare staff that will be assisting or performing the procedure, precautions related to the procedure, and any specific patient teaching that should occur prior to administering the procedure.	