



DMS-503: PATIENT CARE TECHNIQUES FOR IMAGING PROFESSIONALS (FORMERLY DMS-103)

Effective Term

Fall 2024

BOT Approval Date

01/11/2024

Discipline

DMS - Diagnostic Medical Sonography

Course Number

503

Course Title

Patient Care Techniques for Imaging Professionals (formerly DMS-103)

Short Title

Patient Care for Imaging

Credit Status (CB 04)

D - Credit - Degree applicable

Units

Lecture Units

2.00

Lab Units

1.00

Total Units

3.00

Hours

Lecture Contact Hours

32-36

Out of Class Hours Lecture

64-72

Lab Contact Hours

48-54

Out of Class Hours Lab

0.00

Total Contact Hours

80 - 90

Total Out of Class Hours

64 - 72

Total Student Learning Hours

144 - 162

Is this an existing Extensive Lab?

No

**Do you want to propose this for Extensive Lab?**

No

Distance Education

No

Catalog Description

This course is a lecture with an incorporated lab class designed to teach the sonography, or imaging student, basic patient care techniques including the responsibilities and relationships of various allied health departments in a health care setting. Discussions and hands-on skills will include: aseptic and surgical techniques, universal precautions, emergency conditions and procedures, transferring patients, vital signs, medical emergencies, imaging procedures, medical ethics, communication, body mechanics, and infection control used by radiology personnel in working with patients. Professional communication and ethical legal issues in health care are introduced. (formerly DMS-103)

Requisites**Prerequisite(s)****Prerequisite(s) (must be taken before)**

Acceptance into the Diagnostic Medical Sonography Program.

Codes**TOP Code (CB 03)**

1227.00* - *Diagnostic Medical Sonography

CIP Code

51.0910 - Diagnostic Medical Sonography/Sonographer and Ultrasound Technician.

Student Accountability Model (SAM) Priority Code (CB 09)

C - Clearly Occupational

Noncredit Category (CB 22)

Y - Credit Course

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications**Minimum Qualifications**

Diagnostic Medical Technology

And/Or

End

CSU Area(s)**IGETC Area(s)****Learning Objectives****Learning Objectives****Learning Objective**

1. Analyze various professions that participate in the patient's total health care.
2. Understand the scope of practice of a sonographer, medical ethics, and mission statement for the allied health care professional and patient.
3. Differentiate the stages and characteristics of dying and analyze how it relates to patient care and communication.

4. Compare and contrast methods for evaluation of patient status and safety.
5. Prepare and demonstrate the correct manner of moving, transferring, and positioning patients to prevent personal injury and patient injury.
6. Compare the emergency medical code systems for the institution and analyze the role of the sonographer during any medical emergency.
7. Document, describe, and demonstrate infection control and aseptic techniques used in the hospital.
8. Demonstrate the proper skills for taking vital signs and list normal values.
9. Consider the clinical manifestations of different medical emergencies and how to respond to each.
10. Demonstrate proper skills in operating different equipment attached to the patient.
11. Develop understanding of cultural, racial, and ethnic diversity in a patient centered care setting.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Student will demonstrate the appropriate method for moving a patient from the hospital bed to a wheelchair.
2. Student will identify the emergency code for a patient who has stopped breathing.
3. Student will describe the scope of practice for the Diagnostic Medical Sonographer.
4. Student will understand cultural, racial, and ethnic diversity in a patient centered care setting.
5. Student will demonstrate aseptic technique for setting up a procedure tray.
6. Student will demonstrate proper ergonomics for scanning patients.
7. Student will evaluate and synthesize evidence to draw valid conclusions.

Program Learning Outcomes

Learning Outcome
Demonstrate professional and ethical behavior in the workplace.
Show discretion with and implement HIPPA laws for all patients.
Use effective communication with patients, staff, and physicians.

Institutional Learning Outcomes

Aesthetic Awareness: The student will identify and evaluate how aesthetic expression leads to an appreciation of social and cultural context as well as the values of art and nature.

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Cultural Awareness and Humility: The student will demonstrate knowledge of and sensitivity toward individuals of diverse ethnicity, age, gender, sexual orientation, and religious affiliations, as well as toward those individuals with diverse abilities and socio-economic classes to respectfully interact with individuals of diverse perspectives, beliefs and values while being mindful of the limitation of their own cultural frameworks.

Information and Technology Literacy: The student will access, interpret, evaluate, and apply relevant information sources and digital media effectively, and in an ethical and legal manner.

Scientific Awareness: The student will apply the scientific method of inquiry to assess potential solutions for real-life challenges by employing science-based knowledge and methodologies in daily life.

Social Awareness: The student will recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social, and environmental issues from multiple perspectives and appreciate similarities and differences among cultures.

Civic
Personal
and Professional Responsibility

Content

Course Lecture Content

- I. Introduction to Sonography

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1. Concepts for success as a student in Sonography
 - a. Classroom and clinical survival skills
 - b. Hospital workflow
 - c. Additional imaging modalities in Radiology
 - d. Critical thinking skills in the imaging profession
 - II. The Sonographer- A closer look
 1. Personality type-watching and emotional intelligence
 2. Work ethic in sonography
 3. Character development as an imaging professional
 4. Effective communication
 - a. Communication with Sonographers
 - b. Communication with interpreting physicians
 - c. Communication with patients
 - i. Mutual trust
 - III. Cultural considerations
 - a. Ethnicity
 - i. Patient centered care
 - b. Religion
 - i. Diet considerations
 - ii. Medication
 - iii. Treatments and surgery
 - c. Distance – physical proximity of patient to sonographer
 - d. Timing
 - i. right time versus correct time
 - e. Prejudice –
 - i. Culturally derived bias
 - ii. race
 - ii. ethnicity
 - iii. sexual orientation or appearance
 - IV. Historical and current applications of ultrasound in Medicine
 1. Sound and the history of acoustics
 2. Pioneers in Sonography
 3. Overview of the use of ultrasound in medicine
 4. Specialties within the sonography profession
 5. Current and future applications of ultrasound in medicine
 - V. Professional environment
 1. Professional environment of the sonographer
 - a. Academic accreditation
 - b. Certification organizations
 - c. Professional membership societies
 2. Leadership
 3. Job opportunities
 - a. Career goals
 - b. Career establishment
 - VI. Ergonomics and prevention of work related musculoskeletal disorders
 1. Proper posture
 2. Body mechanics
 3. Causes of work-related musculoskeletal disorders
 4. Locations of work-related musculoskeletal disorders

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- 5. Prevention of work-related musculoskeletal disorders
 - VII. Ethics and Professionalism
 - 1. Ethical standards of the sonography profession
 - 2. Ethical issues in diagnostic medical sonography
 - 3. Importance of professionalism.
 - VIII. Legal essentials and patient rights
 - 1. Law and legal concerns in medicine
 - a. Legal environment in which sonographers practice
 - b. Sonographer's scope of practice
 - 2. Patient's rights
 - IX. Basic principles and Knobology
 - 1. Directional terminology and patient positioning
 - 2. Function of ultrasound modes
 - 3. Common universal controls on ultrasound machines
 - 4. Moving ultrasound machine
 - X. Introduction to patient care
 - 1. Basic human needs
 - 2. Grieving process
 - 3. Communication in patient care
 - a. Cultural diversity
 - b. Gender Identity
 - 4. Communication before, during, and after each sonographic examination
 - a. Verbal
 - b. non-verbal
 - XI. Fundamental patient care
 - 1. Patient Medical History
 - 2. Correct Patient Identification
 - 3. Vital signs
 - a. Sonographer role in monitoring vital signs
 - b. Abnormalities and variances in vital signs
 - i. Normal ranges for blood pressure
 - ii. Pulse
 - iii. Respiration
 - iiii. Body temperature
 - 4. Communication related considerations
 - a. Non-English speaking
 - b. Hearing impaired
 - i. Hearing aids
 - ii. Sign language
 - iii. Facial expressions
 - iiii. Body gestures
 - c. Vision impaired
 - d. Speech impaired
 - e. Confused or disoriented
 - f. Mental challenges:
 - 4. Age-Related Considerations
 - a. Pediatric Patient Considerations
 - b. Geriatric Patient Considerations
 - c. Five stages of dying

5. Patient mobilization

- a. Assessment of patient mobility
- b. Transferring patients from bed to wheelchair and back to bed.

XII. Medical Emergencies

1. Patient assessment of cognitive and neurologic state
 - a. Prior to sonographic exam or procedure
 - b. During a sonographic exam or procedure
2. Terminology related to medical emergencies
3. Signs and symptoms of various medical emergencies
4. Sonographers role in medical emergencies
 - a. Emergency codes

XIII. Infection control for the Sonographer

1. Cycle of infection
 - a. Transmission for pathogenic microorganisms
2. Standard precautions
 - a1. Personal protective equipment
3. Sonographers role in infection control
4. Proper preparation for entering a patient isolation room
5. Procedure tray preparation with sterile techniques

XIV. Invasive procedures and surgical asepsis

1. Rules of surgical asepsis for invasive procedures
 - a. Handwashing
 - b. Skin Prep
 - c. Standard Precautions
2. Maintaining a sterile field
 - a. Opening a sterile tray.
 - b. Establishing a sterile field
 - c. Donning and doffing sterile personal equipment
3. Sonographers team role in the surgical suite

XV. Sonographic examination and guidelines

1. Quality assurance
2. Requirements included in routine sonographic examination
3. Standard protocols

Course Lab Content

I. Utilizing the Scan Lab

1. Review clinical competencies
2. Orientation to the Scan Lab
 - a. Ultrasound machine
 - b. Phantoms
 - c. Simulator

II. Myers Brigg assessment

III. Modes of Imaging

1. 3D Imaging
2. Harmonics
3. M-Mode
4. Continuous Wave Mode

VI. Patient scenarios

1. Patient- Sonographer
 - a. Age-related considerations

- b. Gender-related considerations
 - c. Ethnicity considerations
 - d. Disability considerations
 - i. Physical
 - ii. Mental
 - iii. Emotional
- 2. Radiologist - Sonographer
- 3. Physician - Sonographer
- V. Web search
 - 1. Professional societies
 - 2. Certification organizations
 - 3. Accrediting bodies
 - 4. Job postings
- VI. Ergonomics
 - 1. Scanning chair position
 - 2. Machine position
 - 3. Posture
 - a. arm and shoulder positions
 - b. patient positions
 - c. table positions
- VII. Sonographer scenarios
 - 1. Professional behavior
 - 2. Medical ethics
- VIII. Ultrasound equipment
 - 1. Knobology
 - a. Depth
 - b. Gain
 - c. TGC
 - d. Focus
 - e. Frequency
 - 2. Machine transport
 - a. brakes and steering
 - b. monitor
 - c. DiCom connections
 - d. cleaning and disinfection
- IX. Mock Exam scenarios
 - 1. Patient communication
 - a. verbal
 - b. non-verbal
 - 2. Pre-exam interview
 - a. Patient identifiers
 - i. Name
 - II. Birthdate
 - b. Symptoms
 - c. Surgical history
 - 5. AIDET
- X. Patient Care
 - 1. Vital signs
 - a. Blood pressure

- b. Doppler on arms and ankles
 - c. Pulse
 - d. Moving and transferring patients
 - i. wheelchairs
 - ii. IV poles
 - iii. foley catheters
 - iiii. gait belts
 - iiiii. draw sheets
- XI. Emergency protocol
- 1. Patient mobility
 - 2. Cognitive ability
 - 3. Hospital codes
- XII. Asepsis and Disinfection protocols
- 1. equipment disinfection
 - 2. instrument sterilization
 - 3. Donning and doffing PPE
 - 4. transducer covers
 - i. sterile probe covers
 - ii. non-sterile probe covers
 - 5. Handwashing
 - 6. Sterile field protocol
 - 7. Sterile tray protocol
 - 8. Biopsy techniques
 - i. cyst aspiration
 - ii. core biopsy
- XIII. Sonography department protocol
- 1. Patient scheduling
 - i. Hospital
 - ii. Out-patient
 - 2. Exam protocols
 - 3. Technologist worksheet
 - 4. Radiologist communication
 - i. Technologist impression worksheet
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Methods of Instruction

Method

Observation and Demonstration

Integration

Demonstrations will be presented by the instructor on how to properly don and doff sterile gowns and gloves, proper drawing of liquid medications into a syringe using aseptic technique, proper body mechanics of positioning the patient and sonographer ergonomics to avoid musculoskeletal injuries, and proper sterile tray set up.

Method

Directed Study

Integration

Hospital emergency codes will be presented in lecture format. It is important that students learn emergency medical codes used in a hospital setting and the appropriate response to those codes. These codes will be discussed in a small groups, then reviewed and summarized as a class.



Method

Discussion

Integration

Group discussions will introduce and enhance methods of patient care through AIDET: Acknowledge, Introduce, Duration, Explanation, and Thank you.

Method

Lab Activities

Integration

Hands on participation in the campus skills lab will allow students to demonstrate proper protocols for aseptic technique: sterile gowning, donning and doffing sterile gloves, syringe preparation, and sterile tray preparation.

Method

Lecture

Integration

Face to face lectures used to present material about patient care techniques and support learning objectives: Sonographer scope of practice, medical ethics, patient safety, infection control, aseptic technique, operation of equipment, medical emergencies, and cultural, racial, and ethnic diversity in a patient centered care setting.

Method

Role Playing/Simulation

Integration

The instructor will present patient care scenarios that demonstrate various medical ethical issues. Using the proper scope of practice, students will evaluate and discuss what response would be appropriate for the Sonographer in each scenario.

Method

Film/video Viewing and Discussion

Integration

Face to face lectures are enhanced with videos that reinforce patient care learning objectives: Sonographer scope of practice, medical ethics, patient safety, infection control, aseptic technique, operation of equipment, medical emergencies, and cultural, racial, and ethnic diversity in a patient centered care setting.

Method

Lab Activities

Integration

In the campus lab, the instructor will demonstrate proper ergonomics using the ultrasound machine, scanning chair, sonographer body position, and patient positioning.



Methods of Evaluation

Method

Class Participation

Integration

Evaluation of student understanding of patient care concepts such as recognizing medical emergencies, transferring patients safely, infection control, and patient centered care will be evaluated based on active participation and the willingness of the student to collaborate in a small group discussions and "share-out" highlights of the chapter concepts in a class discussion.

Method

Class Performance

Integration

Student psychomotor skills will be evaluated using a skills check of list given by the instructor, who will observe and sign off student demonstrations of proper gowning, gloving, syringe preparation, body mechanics, and sterile tray preparation.

Method

Exams/Tests

Integration

Written examinations will be used to evaluate students correct understanding and retained knowledge of the sonographers scope of practice, infection control, aseptic technique, HIPAA, and medical ethics. Examinations will include written multiple choice questions, short answer fill-in, and labeling diagrams. Student understanding will be evaluated for correctness of multiple choice questions, complete fill-in answers, and correct labeling of diagrams.

Method

Quizzes

Integration

Weekly quizzes will allow students to demonstrate formative and correct understanding of patient care concepts that include: medical emergencies, abnormal patient signs and symptoms, sonographers scope of practice, infection control, surgical asepsis. Student understanding will be evaluated for correctness of multiple choice questions, complete fill-in answers, and correct labeling of diagrams.

Method

Self-Evaluation

Integration

Evaluation of student reflections are graded on the degree of completeness that they express how they will interact with patients through a personal mantra. The development of a personal mantra should include examples of what they will say and how they will communicate with patients of all age groups, ethnic groups, genders, and disabilities.

Assignments

Assignment Type

Other

In-class and/or outside of class

In-class



Formative or Summative

Formative

Assignment

Demonstrate sterile gowning and gloving, syringe preparation, body mechanics, and preparing sterile trays.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

In the campus lab, demonstrate proper ergonomics using the ultrasound machines' swivel keyboard and adjustable monitor; scanning chair position; sonographers body position: head, shoulders, back, legs, and arm; and patient positioning. Proper ergonomics should be continually developed and perfected during the semester in both skills lab and in clinical internships.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

In the campus lab, demonstrate use of machine knobology using: TGC, depth, gain, focus, measurement cursors, color doppler, power doppler, pulse-wave doppler, dynamic range, dual screen, annotation, patient demographics, review images, delete images, and zoom images.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Demonstrate proper skill to use a blood pressure cuff at the arm and ankle when doing ankle-brachial index exams; proper operation of continuous wave doppler device; identify and find the correct arterial structures in the arm and ankle using the continuous wave doppler device; and obtaining a palpable patient heart rate at the wrist and carotid artery.

Assignment Type

Other

In-class and/or outside of class

In-class



Formative or Summative

Formative

Assignment

Demonstrate proper probe cover use for sterile procedures and transvaginal exams. Proper use will include standard and aseptic technique of placement on the transducer, removal from the transducer, and disinfection procedure.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Post a final discussion in the CMS discussion board describing the highlights of the course, including: sonographers duties; ergonomics; scope of practice; patients physical, mental, and emotional well-being; infection control; emergency protocols. Summarize how new skills will be used in clinical training and future career goals to provide comprehensive care to patients.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Take Myers Brigg assessment, participate in classroom discussion on personality types and emotional intelligence. Discussion should include why personality types and EI are important in a healthcare setting and how this knowledge will affect the sonographer, co-workers, colleagues, and patients.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Read and analyze article "Disparities in Health and Healthcare: 5 key questions and answers; Post analysis on CMS Canvas discussion post. Analysis should include acronym definitions, facts about health disparities, cultural bias and/or discrimination issues,

Assignment Type

Reading



In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Read and analyze article "Imaging Findings in Transgender patients after gender affirming surgery"; Post analysis on CMS Canvas discussion post. Analysis should include acronym definitions, facts about before and after surgery, cultural bias and/or discrimination issues, how patients can be supported in a healthcare setting or radiology department.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Complete weekly quizzes that consist of multiple choice and key term definitions which cover each of the chapter topics of: healthcare work environment, sonographers duties; ergonomics; scope of practice; patients physical, mental, and emotional well-being; infection control; emergency protocols.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Develop a personal mantra of how you will communicate with patients of all age groups, ethnic groups, genders, and disabilities. The personal mantra should include examples of each group.

Course Materials**Textbooks**

Steven M. Penny (2020). Introduction to sonography and Patient Care, Lippincott. ISBN 13: 9781975120108

Kimberly Townsend PhD RN WHNP-BC (2018) Fundamental Concepts and Skills for the Patient Care Technician 2nd Edition, (This title will be released on September 5, 2022.) Evolve. ISBN 13: 978-0323794855

Open Educational Resources

Merlot- 2018, Patient Centered-Care. Munir Kassa Eshetu, MD, Anonymous Co-Author(s).
Presentation

Author:

Munir Kassa Eshetu; Anonymous Co-Author(s)

Date Created:

December 23, 2019



Date Modified:
July 18, 2021

Religious Diversity: Practical Points.
Material Type:
Reference Material
Author:
John Ehman
Date Created:
October 16, 2021
Date Modified:
October 17, 2021

Class Size Information

Class Size

30

Class Size Category

F - Individualized, skills#based instruction/field practice 30

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

This course teaches diverse content that includes patient scenarios describing situations where gender, culture, race, and disabilities have an impact on patient care. Course objectives and learning outcomes are supported through classroom discussions and simulation of patient care scenarios or case studies which are presented to foster knowledge, empathy, and patient advocacy in developing future healthcare professionals. Coursework also includes how gender identification can be a factor in healthcare- both surgical reassignment and appearance. Sonography graduates will encounter scanning patients from diverse populations, disabilities, and patients who may appear one gender, but have unaltered reproductive organs or have had surgical alterations.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course resources are offered in multiple forms to offer diverse learning methods to students. Audio learners can utilize voice-over lectures; Visual learners can utilize power-point diagrams, textbook, lab demonstrations, and videos; Hands-on learners can utilize lab simulation and practice concepts or protocols in the campus lab.

Interactions

Explain how the course will incorporate student-to-student interaction.

This course has a lab component which enhances the classroom discussions with hands-on student interaction through simulation in pairs or groups.

Explain how the course will incorporate instructor-to-student interaction.

This course provides opportunities for students to observe instructor demonstrations of patient care or scanning protocols and then practice what was observed. Instructors interact through face to face lectures where students may ask questions. The CMS houses announcements, syllabi, voice-over lectures, and course schedule through modules. Instructor uses real-life experience stories during lectures to enhance student learning. Instructor encourages use of office hours or meeting after class if student needs assistance or guidance.

Explain how the course will incorporate student-to-content interaction.

This course has a detailed textbook which acts as a career manual for sonographers. Students study text content, power point, video, and carry out hands-on tasks in the campus lab.

Explain how the course will incorporate student-to-self interaction (metacognitive).

This course provides opportunities for students to think about how they will make a plan that provides the best patient care and diagnostic interpretation from beginning to end of their interaction with each patient they care for. Students are encouraged to reflect real-life clinical experiences in this process.

Key: 1218