Miami Dade College

Course Description

NMT1713C | Nuclear Medicine Procedures 1 | 2.00 credits

This course will include the imaging parameters necessary to obtain images for the basic procedures performed in a Nuclear Medicine department. Students will learn about imaging procedures related to the following systems: skeletal, central nervous, cardiovascular genitourinary, respiratory and gastrointestinal. Instrumentation necessary to produce the required images as well as patient management during the procedures will be addressed. Prerequisites: BSC2085, BSC2085L, BSC2086, BSC2086L, CHM1033, CHM1033L; Corequisites: NMT2102, NMT2534C, NMT2804C

Course Competencies:

Competency 1: The student will demonstrate an understanding of all aspects of skeletal system procedures performed in nuclear medicine by:

1. Utilizing Limited Bone Scan, Whole Body Bone Scan, Three-Phase Bone Scan, Bone SPECT Scan:
    a. Instrumentation - detector system, data acquisition, data analysis, ancillary equipment, and computer processing
    b. Radiopharmaceuticals - type, dosage, administration, biodistribution, dosimetry, and if applicable, pharmaceutical intervention
    c. Patient Preparation, Monitoring, and Education: indications and contraindications, pregnancy, nursing, dietary restrictions, adverse reactions, medications, and age-specific considerations
    d. Imaging Techniques - views performed and patient-detector orientation
    e. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests Anatomy and Pathophysiology

Competency 2: The student will be able to describe all aspects of renal system procedures performed in nuclear medicine by:

1. Utilizing Renal Function Imaging, Renal Perfusion Imaging, and Renal Morphology Imaging:
    a. Instrumentation - detector system, data acquisition, data analysis, ancillary equipment, and computer processing
    b. Radiopharmaceuticals - type, dosage, administration, biodistribution, dosimetry, and if applicable, pharmaceutical intervention
    c. Patient Preparation, Monitoring, and Education: indications and contraindications, pregnancy, nursing, dietary restrictions, adverse reactions, medications, and age-specific considerations
    d. Imaging Techniques - views performed and patient-detector orientation
    e. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests Anatomy and Pathophysiology

Competency 3: The student will be able to describe all aspects of pulmonary system procedures performed in nuclear medicine by:

1. Utilizing Perfusion Pulmonary Scan, Ventilation Pulmonary Scan, and Quantitative Pulmonary Scan:
    a. Instrumentation - detector system, data acquisition, data analysis, ancillary equipment, and computer processing
    b. Radiopharmaceuticals - type, dosage, administration, biodistribution, dosimetry, and, if applicable, pharmaceutical intervention
    c. Patient Preparation, Monitoring, and Education: indications and contraindications, pregnancy, nursing, dietary restrictions, adverse reactions, medications, and age-specific considerations
    d. Imaging Techniques - views performed and patient-detector orientation
    e. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests Anatomy and Pathophysiology

Competency 4: The student will be able to accurately describe all aspects of gastrointestinal system procedures performed in nuclear medicine by:

1. Utilizing Meckel's diverticulum, RBC hemangioma, and Liver/Spleen:
    a. Instrumentation - detector system, data acquisition, data analysis, ancillary equipment, and computer processing
    b. Radiopharmaceuticals - type, dosage, administration, biodistribution, dosimetry, and, if applicable, pharmaceutical intervention
    c. Patient Preparation, Monitoring, and Education - indications, contraindications, pregnancy, nursing, dietary restrictions, adverse reactions, medications, and age-specific considerations
    d. Imaging Techniques - views performed and patient-detector orientation
    e. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests Anatomy and Pathophysiology

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning