**NMT 2733C  Nuclear Medicine Methodology 3**

Course Description: A continuation of Nuclear Medicine Procedures 2, students will learn the imaging parameters necessary to obtain images as well as the use of instrumentation necessary to produce the required images performed in a nuclear medicine department. Exposure to patient management during the procedures will also be addressed. Prerequisites: BSC 2085/L, BSC 2086/L, NMT 1713C, NMT 2723C; Corequisites: NMT 2779C, NMT 2824C. (1 hr. lecture, 3 hr. clinical)

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<th>Course Competency</th>
<th>Learning Outcomes</th>
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| **Competency 1:** Students will be able to accurately describe all aspects of lymphoscintigraphy procedures performed in nuclear medicine by: | • Communication  
• Numbers / Data  
• Critical thinking  
• Information Literacy |
| **1. Utilizing breast lymphoscintigraphy; melanoma lymphoscintigraphy:** |  |
| 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, age specific considerations |  |
| D. Imaging Techniques - views performed and patient-detector orientation |  |
| E. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests |  |
| F. Anatomy and Pathophysiology |  |
| **Competency 2:** The student will be able to accurately describe all aspects of therapeutic procedures performed in nuclear medicine by: |  |
| | • Communication  
• Numbers / Data  
• Critical thinking  
• Information Literacy |
1. Identifying and demonstrating palliative bone therapeutic procedures, thyroid ablation procedures, hyperthyroidism therapeutic procedures, non-Hodgkin's lymphoma therapeutic procedures:
   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, age specific considerations
   D. Imaging Techniques - views performed and patient-detector orientation
   E. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests.
   F. Anatomy and Pathophysiology
   G. Regulations

**Competency 3:** The student will accurately describe all aspects of tumor procedures performed in nuclear medicine by:

1. Utilizing I-131 whole body tumor imaging; sestamibi tumor imaging; PET or PET/CT tumor imaging; peptide receptor 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, age specific considerations
   D. Imaging Techniques - views performed and patient-detector orientation
   E. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests.
   F. Anatomy and Pathophysiology

- Communication
- Numbers / Data
- Critical thinking
- Information Literacy

Updated Spring 2021
2. Identifying and demonstrating abscess, infection, and inflammation imaging procedures

**Competency 4:** The student will be able to accurately describe all aspects of uncommon, less frequently performed nuclear medicine procedures by:

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1. Identifying and assessing dacroscintigraphy and scintimammography:
   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, age specific considerations
   D. Imaging Techniques - views performed and patient-detector orientation
   E. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests.
   F. Anatomy and Pathophysiology

2. Utilizing shunt imaging, and heat damaged red blood cell 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, age specific considerations
   D. Imaging Techniques - views performed and patient-detector orientation
   E. Interpretation of images - normal and abnormal variants, artifacts, and correlative tests.
   F. Anatomy and Pathophysiology.