Nuclear Medicine (NUCMED)

NUCMED 1000: Orientation to Nuclear Medicine
An overview using a series of short rotations through local nuclear medicine departments and a self-directed review of a current text. Clinical rotations for this course are arranged on an individual basis. Graded on S/U basis only.
Credit Hour: 1

NUCMED 3255: Orientation to Clinical Practice
This course provides an introductory experience to clinical practice. Must be accepted into Nuclear Medicine Program. Graded on A-F basis only.
Credit Hours: 2
Prerequisites: Restricted to Nuclear Medicine students, junior standing required

NUCMED 3256: Clinical Nuclear Medicine I
Introductory clinical course for senior level students. Introduces instrumentation, administration, procedures, and laboratory techniques. Includes supervised clinical participation.
Credit Hours: 2
Prerequisites: NUCMED 3263 and restricted to Nuclear Medicine students only

NUCMED 3263: Morphological Correlations in Nuclear Medicine I
Anatomy, physiology, and pathology of the human body as assessed using medicine techniques. The first of two courses that address current clinical applications of nuclear medicine.
Credit Hours: 3
Prerequisites: restricted to Nuclear Medicine students only

NUCMED 3268: Clinical Nuclear Medicine II
Continuation of clinical series taught in conjunction with NUCMED 3256 and NUCMED 4232. Addresses advanced therapeutic and diagnostic procedures, computer applications, and quality assurance procedures.
Credit Hours: 3
Prerequisites: NUCMED 3256. Restricted to Nuclear Medicine students only

NUCMED 4268W: Clinical Nuclear Medicine II - Writing Intensive
Continuation of clinical series taught in conjunction with NUCMED 3256 and NUCMED 4232. Addresses advanced therapeutic and diagnostic procedures, computer applications, and quality assurance procedures.
Credit Hours: 3
Prerequisites: NUCMED 3256. Restricted to Nuclear Medicine students only

NUCMED 4269: Clinical Nuclear Medicine III
Final course in clinical series. Seminar discussion of the areas of professional ethics, current medical-legal considerations, and future nuclear medicine applications.
Credit Hour: 1
Prerequisites: NUCMED 3256. Restricted to Nuclear Medicine students only

NUCMED 4269W: Clinical Nuclear Medicine III - Writing Intensive
Continuation of clinical series taught in conjunction with NUCMED 3256 and NUCMED 4232. Addresses advanced therapeutic and diagnostic procedures, computer applications, and quality assurance procedures.
Credit Hours: 3
Prerequisites: NUCMED 3256. Restricted to Nuclear Medicine students only

NUCMED 4299: Morphological Correlations in Nuclear Medicine II
Anatomy, physiology, and pathology of the human body as assessed using nuclear medicine techniques. The second of two courses that address current clinical applications of nuclear medicine.
Credit Hours: 3
Prerequisites: NUCMED 3263, restricted to Nuclear Medicine students

NUCMED 4327: Nuclear Medicine Instrumentation
Radionuclide imaging systems and the use of computers. Topics include Anger camera systems, emission tomography, ultrasound, nuclear magnetic resonance, and bone absorptionmetry.
Credit Hours: 3
Prerequisites: Restricted to Nuclear Medicine students

NUCMED 4329: Radiopharmaceuticals in Nuclear Medicine
Introduces concepts of radiopharmacy, generator systems, labeling of materials, quality control procedures and FDA regulations concerning radiopharmaceuticals.
Credit Hours: 3
Prerequisites: instructor’s consent
Recommended: CHEM 1320

NUCMED 4330: PET in Nuclear Medicine
Overview of special isotope production techniques for positron emitting agents; instrumentation concerns beyond standard Anger imaging; and image critique and analysis with morphologic correlation. May be repeated for credit. Graded on A-F basis only.
Credit Hours: 3
Prerequisites: PHYSCS 1210 and NUCMED 4327 or instructor’s consent. Restricted to Nuclear Medicine students only

NUCMED 4328: Introductory Radiation Biology
(same as BIO_SC 4328, NU_ENG 4328, V_M_S 7328). Concepts of ionizing radiations, their actions on matter through effects on simple chemical systems, biological molecules, cell, organisms, man.
Credit Hours: 3
Prerequisites: junior standing
Recommended: Sciences/Engineering; one course in Biological Sciences and Physics/Chemistry; or instructor's consent

NUCMED 4085: Problems in Nuclear Medicine
Supervised investigation in an aspect of nuclear medicine technology, usually culminating in a written report.
Credit Hour: 1-3

NUCMED 4232: Clinical In Vitro
Detailed review of current regulations and procedures governing the use of open sources of radioactivity in a nuclear medicine setting.
Credit Hours: 3
Prerequisites: Restricted to Nuclear Medicine students

NUCMED 4327: Nuclear Medicine Instrumentation
Radionuclide imaging systems and the use of computers. Topics include Anger camera systems, emission tomography, ultrasound, nuclear magnetic resonance, and bone absorptionmetry.
Credit Hours: 3
Prerequisites: Restricted to Nuclear Medicine students

NUCMED 4329: Radiopharmaceuticals in Nuclear Medicine
Introduces concepts of radiopharmacy, generator systems, labeling of materials, quality control procedures and FDA regulations concerning radiopharmaceuticals.
Credit Hours: 3
Prerequisites: instructor’s consent
Recommended: CHEM 1320

NUCMED 4330: PET in Nuclear Medicine
Overview of special isotope production techniques for positron emitting agents; instrumentation concerns beyond standard Anger imaging; and image critique and analysis with morphologic correlation. May be repeated for credit. Graded on A-F basis only.
Credit Hours: 3
Prerequisites: PHYSCS 1210 and NUCMED 4327 or instructor’s consent. Restricted to Nuclear Medicine students only
NUCMED 4841: Microbiological Control and Radiation Monitoring
This lecture and laboratory class includes analytic techniques used for monitoring and controlling microbial, particulate, and radioactive contamination. Topics will include testing of QC supplies, monitoring of clean room environments, product testing both before and after sterilization, bioburden / microbial limit testing, sterility testing as a qualitative measure for contamination control, endotoxin testing, waste handling, and disposal techniques. Graded on A-F basis only.

Credit Hours: 4
Prerequisites or Corequisites: CDS 4328, or NUCMED 3328 and RA_SCI 4303; CHEM 2100; BIOCHM 3630; MICROB 2800; STAT 1200 or STAT 1300 or STAT 1400
Corequisites: concurrent enrollment in NUCMED 4842

NUCMED 4842: Statistical Analysis in Radioisotope Manufacturing
This combination lecture and computer lab class covers topics including statistical methods for sample evaluation, data analysis software coding (e.g., MINTAB), quality assurance methodologies used for ensuring radiochemical and radioisotopic quality and integrity during production, transportation, and end use, and practice standards for maintaining regulatory compliance. Graded on A-F basis only.

Credit Hours: 2
Prerequisites or Corequisites: CDS 4328, or NU_ENG 4328 and NU_ENG 4303; CHEM 2100; BIOCHM 3630; STAT 1200 or STAT 1300 or STAT 1400
Corequisites: concurrent enrollment in NUCMED 4841

NUCMED 4843: Quality Control of Radiochemical Products
This course is designed to be a correlative course taken in conjunction with other nuclear medicine courses and will provide an overview of reactor and accelerator based production of radioisotopes, and the techniques used to ensure product identity, strength, and purity. Additionally, course topics will include the discussion of the factors affecting radiochemical integrity, Good Laboratory Practice (GLP), Good Manufacturing Practice (GMP), FDA documentation practices, vendor qualifications, and control of materials. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: CDS 4328 (or NU_ENG 4328 and NU_ENG 4303); CHEM 2100; BIOCHM 3630; STAT 1200 or STAT 1300 or STAT 1400

NUCMED 4940: Clinical In Vivo I
Practical experience in the clinical setting with imaging procedures performed in nuclear medicine.

Credit Hours: 6
Prerequisites: Restricted to Nuclear Medicine students

NUCMED 4941: Clinical In Vivo II
Practical experience in clinical setting with advanced imaging techniques and instrument quality control.

Credit Hours: 7
Prerequisites: NUCMED 4940. Restricted to undergraduate Nuclear Medicine students

NUCMED 7085: Problems in Nuclear Medicine
Supervised investigation in an aspect of nuclear medicine technology, usually culminating in a written report.

Credit Hours: 3

NUCMED 7329: Radiopharmaceuticals in Nuclear Medicine
Introduces concepts of radiopharmacy, generator systems, labeling of materials, quality control procedures and FDA regulations concerning radiopharmaceuticals.

Credit Hours: 3
Prerequisites: CHEM 1320 and instructor's consent

NUCMED 7330: PET in Nuclear Medicine
Overview of special isotope production in techniques for positron emitting agents; instrumentation concerns beyond standard Anger imaging; and image critique and analysis with morphologic correlation. May be repeated for credit. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: PHYSCS 1210 and NUCMED 4327 or instructor's consent