Mizzou
University of Missouri

Nuclear Medicine (NUCMED)

NUCMED 1000: Introduction to Nuclear Medicine
Introduction to the profession of nuclear medicine technology. In addition to scheduled clinical experiences, topics include educational requirements, procedures, and professional trends.

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. 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 3328: Introductory Radiation Biology
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: Regulation of Radioisotopes
(cross-leveled with NUCMED 7232). 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 4268: 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 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 4300: Advanced Procedures
This course is designed to introduce classic, novel, and future nuclear medicine diagnostic and therapeutic agents. This course will also cover the FDA approval process, instrumentation and radiopharmaceutical

quality assurance, scheduling, and pediatric considerations. Graded on A-F basis only.

Credit Hours: 3
Recommended: NUCMED 4329 and NUCMED 4330

NUCMED 4327: Nuclear Medicine Instrumentation
Principles of operation, quality control, and application of radiation detection equipment. Topics include scintillation and gas-filled detector concepts and equipment, semiconductor systems, gamma camera, single-photon emission tomography, and health informatics.

Credit Hours: 3
Prerequisites: Restricted to Nuclear Medicine students

NUCMED 4329: Radiopharmaceuticals in Nuclear Medicine
(cross-leveled with NUCMED 7329). 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
(cross-leveled with NUCMED 7330). 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: 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 4939: Nuclear Clinical Internship I
Application of nuclear medicine in supervised clinical settings. Clinical experience to include imaging procedures and techniques, radiation safety, safe handling of radiopharmaceuticals, and quality control. Graded on A-F basis only.

Credit Hours: 2
Prerequisites: NUCMED 4299; Restricted to Nuclear Medicine Students

---

NUCMED 4940: Nuclear Clinical Internship II
Application of nuclear medicine in supervised clinical settings. Clinical experience to include imaging procedures and techniques, radiation safety, safe handling of radiopharmaceuticals, and quality control. Graded on A-F basis only.

Credit Hours: 6
Prerequisites: NUCMED 4939; Restricted to Nuclear Medicine students

---

NUCMED 4941: Nuclear Clinical Internship III
Application of nuclear medicine in supervised clinical settings. Clinical experience to include imaging procedures and techniques, radiation safety, safe handling of radiopharmaceuticals, and quality control. Graded on A-F basis only.

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 7232: Regulation of Radioisotopes
(cross-leveled with NUCMED 4232). Detailed review of current regulations and procedures governing the use of open sources of radioactivity in a nuclear medicine setting. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: Restricted to students admitted to the Master of Health Science in Clinical and Diagnostic Sciences-Imaging Sciences emphasis area

---

NUCMED 7329: Radiopharmaceuticals in Nuclear Medicine
(cross-leveled with NUCMED 4329). 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
(cross-leveled with NUCMED 4330). 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

---