

Nuclear Medicine Technology

KU's certificate program in nuclear medicine technology is a 12-month accredited program which prepares technologists to inject radiopharmaceuticals and use highly technical cameras and computers in a clinical setting. The program is a collaboration with the Department of Radiology and The University of Kansas Hospital together with the KU School of Health Professions at KU Medical Center in Kansas City, Kan.

A certificate from the University of Kansas is awarded to the student upon successful completion of the program. Graduates are eligible to take the national registry examinations given by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board.

More about this profession can be found on the program's website (<http://nuclearmedicine.kumc.edu/>).

Program accreditation, outcomes, and gainful employment disclosure are available at nuclearmedicine.kumc.edu. (<https://www.kumc.edu/school-of-health-professions/academics/departments/respiratory-care-and-diagnostic-science/academics/nuclear-medicine-technology-certificate-program/gainful-employment-disclosure.html>)

Courses

NMED 70. Introduction to Nuclear Medicine and Medical Law and Ethics for the Imaging Professional. 3.3 Credits.

An introductory overview of the field of nuclear medicine technology with includes medical terminology for clinical nuclear medicine, patient and nursing skills including phlebotomy and vital signs, departmental organization and function, and a basic overview of applied mathematical and statistical analysis used in clinical nuclear medicine. This course will also introduce to the imaging profession the legal aspects to patient care regarding patient rights, ethical theories, risk management, quality patient care. The student will participate in group discussion. Prerequisite: Acceptance into the Nuclear Medicine Training Program

NMED 71. Nuclear Chemistry and Physics. 2 Credits.

This course is designed to present the theories of nuclear chemistry and physics including theory of Bohr's atom, radiation production, decay, physical half life and interaction with matter, chemical reactions and equations, review of periodic chart of elements and trilinear chart of nuclides. Prerequisite: College Physics and College Chemistry along with acceptance into the Nuclear Medicine Training Program

NMED 72. Radiopharmacy I. 3.4 Credits.

This course is designed to present the aspects of radiopharmaceuticals including safety and handling, methods of localization, pharmacology, dose calculation and record keeping, methods of production, and quality control. The course will begin to identify the clinical uses of radiopharmaceuticals as this course will be a prerequisite for Radiopharmacy II. Prerequisite: Acceptance into the Nuclear Medicine Training Program

NMED 73. Clinical Procedures I. 2.4 Credits.

This course is taught in modules corresponding to organ systems of the body. This course provides instruction in Skeletal, Liver and Spleen, Hepatobiliary and Respiratory systems. Each module includes: review of anatomy and physiology, cross-sectional anatomy, clinical indications for nuclear imaging, nuclear imaging procedures including radiopharmaceuticals for current clinical practices, image interpretation

and review. Prerequisite: Acceptance into the Nuclear Medicine Training Program.

NMED 74. Radiation Biology and Protection. 1.5 Credits.

This course is designed to provide the student with an understanding of the effects of radiation on the human body at the cellular, organ and whole body levels including late effects of radiation exposure and the risk to benefits ratio. This course will provide the students with current federal and state regulations in regards to safe handling, disposal, record keeping, and licensing for the clinical use of radiation. Prerequisite: Acceptance into the Nuclear Medicine Training Program

NMED 75. Clinical Internship I. 6 Credits.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Acceptance into the Nuclear Medicine Training Program

NMED 80. Nuclear Instrumentation, Medical Informatics and Quality Assurance. 2.5 Credits.

This course is designed to familiarize the students with basic non-imaging and imaging with nuclear medicine equipment in the clinic. This course will include basic principles of operation, system configuration and performance characteristics of Scintillation cameras and PET systems, computers and quality control and assurance as required by manufacturer and regulatory agencies. It will introduce the student to various types of medical information systems and their uses in the medical imaging. Prerequisite: Acceptance into the Nuclear Medicine Training Program

NMED 82. Radiopharmacy II. 1 Credits.

This course is the advanced course to Radiopharmacy I. The students will have an understanding of the radiopharmaceuticals that are used in the clinical nuclear medicine department. This course will also cover monoclonal, polyclonal, peptides, PET, therapeutic radiopharmaceuticals, pharmacology, as well as advancement in research that is current on radiopharmaceuticals to be used in the nuclear clinical setting. Prerequisite: Radiopharmacy I

NMED 83. Clinical Procedures II. 8 Credits.

This course is taught in modules corresponding to organ systems of the body. This course provides instruction in Genito-Urinary, Endocrine, EKG, Nuclear Cardiology, Infection/Tumor, Gastro-Intestinal, Neurology, PET, CT, Miscellaneous procedures, and Non-Imaging In-Vivo. Each module includes: review of anatomy and physiology, cross-sectional anatomy, clinical indications for nuclear imaging, nuclear imaging procedures including radiopharmaceuticals for current clinical practices, image interpretation and review. Prerequisite: Clinical Procedures I.

NMED 84. Clinical Internship II. 8 Credits.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Clinical Internship I

NMED 85. Research Methods and Health Administration. 1 Credits.

This course is designed to familiarize the student in research methodology and advances in nuclear medicine for future developments. This course will also demonstrate the phases of research and research different divisions of the research cycle. The second portion of the class will familiarize the student with the administration techniques of health

management. Health management will include billing, coding and budget and equipment selection processes of maintaining a nuclear medicine department. Prerequisite: Acceptance into the Nuclear Medicine Training Program.

NMED 90. Seminar. 2.5 Credits.

This course is designed to prepare the student for national boards in the field of nuclear medicine technology. The student will be responsible for in class review of nuclear clinical procedures, nuclear instrumentation and quality assurance, radiopharmacy, radiation protection and patient care. Students will be required to attend guest lectures and video conferences. Prerequisite: Clinical Procedures I and II, Radiopharmacy I and II, Nuclear Instrumentation and Quality Assurance, Radiation Biology and Protection and Introduction to Nuclear Medicine

NMED 91. Clinical Internship III. 6 Credits.

Through supervised learning situations in a clinical nuclear medicine imaging department the student will gain knowledge and be required to demonstrate competence in specific imaging of nuclear medicine procedures, radiopharmaceutical distribution, imaging instrumentation, patient safety, occupational safety, and quality control practices in the clinical setting. Prerequisite: Clinical Internship II

NMED 100. NMED Preceptorship. 10 Credits.

The student will be exposed to the Positron Emission Tomography and Computed Tomography clinical imaging modules of the field of Nuclear Medicine. The student will observe and perform specified imaging procedures in the clinical setting as well as inject radiopharmaceuticals for the imaging procedure. The student will be responsible for their own learning experience in the fields of Positron Emission Tomography and Computed Tomography. This preceptorship will provide the student with patient care clinical experience. Prerequisite: Board certified in Nuclear Medicine Technology by the American Registry of Radiologic Technologists (A.R.R.T.) or Nuclear Medicine Technology Certification Board (N.M.T.C.B)