Nuclear Medicine Technology

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Nuclear medicine technologist use radioactive materials to image the function of different organs, analyze biologic specimens, and treat certain diseases. This requires a highly skilled professional whose responsibilities and skills range widely.

The Ellis College of Arts and Sciences, in cooperation with Baptist Health College in Little Rock, offers a Bachelor of Science degree in nuclear medicine technology. Three years of the program are completed on the Henderson campus. The fourth and final year are completed at Baptist Health College in Little Rock. Acceptance into the final year is by application to the program at Baptist.

In their final year while at Baptist students are required to follow the normal Henderson State University policies in applying for graduation. Upon completion of the final year of study at Baptist, graduates are eligible to apply for the various certification examinations.

Degree Requirements:

1. Completion of a minimum of 81 semester hours described below with at least a 2.00 GPA is necessary for application to the clinical curriculum. In order to receive credit toward a degree from the university, the student must apply and be admitted to Henderson prior to enrolling in the clinical curriculum in nuclear medicine technology. In all cases, students will be required to complete a minimum of 30 hours of residence credit.

2. Acceptance into the clinical program in nuclear medicine technology at Baptist Health College Little Rock.

3. Completion of the clinical curriculum with a minimum GPA of 2.00.

On-Campus Curriculum **Hours**

A. General Education Component 37

B. Specific General Education and Other Required Courses:
BIO 2114, 2174, and 2184 12
CHM 1014, 1024, 3051, and 3063 12
PHY 2034 and 2044 8
CSC 2003, PHI 3113 6
Statistics (STA 2323 or PSY 2143) 3
Writing Intensive Elective (Cell Biology is recommended) 3

Total Hours 81
Recommended Electives: Biochemistry (CHM 4283).

Professional Program at Baptist Health College Little Rock

Upon application and acceptance into the program at Baptist Health College the student will register for courses at both Baptist and Henderson State University. The tuition and fees at HSU will be waived but students will be responsible for the costs charged by Baptist. Federal and State financial aid, including lottery scholarships will move from HSU to Baptist. Henderson institutional and academic scholarships cannot be moved to Baptist.
To register at HSU the student must contact the HSU program advisor (Dr. John Long) and request registration at HSU. This is required to allow students to receive a BS in Nuclear Medicine Technology from Henderson State University.

Clinical Curriculum at Baptist Health College LR **Hours**

NMT 4318	Clinical Practicum I	8
NMT 4411	Medical Terminology	1
NMT 4294	Instrumentation I	4
NMT 4084	Diagnostic Nuclear Medicine I	4
NMT 4404	Nuclear Physics/Radiochemistry	4
NMT 4421	Medical Ethics and Law	1
NMT 4432	Patient Care	2
NMT 4504	Radiopharmacy/Radionuclide Therapy	4
NMT 432X	Clinical Practicum II	10
NMT 4093	Diagnostic Nuclear Medicine II	3
NMT 4302	Instrumentation II	2
NMT 4452	Computed Tomography (CT, PET/CT)	2
NMT 4104	Diagnostic Medicine III	4
NMT 4113	Diagnostic Medicine IV	3
NMT 4703	Radiation Health Physics	3
NMT 4461	Radiobiology	1
NMT 4601	Senior Seminars	1
	Total Hours	57

Professional Course Descriptions

NMT 4318 Clinical Practicum I. An introduction to clinical imaging. Students will be evaluated during each assigned clinical rotation during the semester.

NMT 432X Clinical Practicum II. Intermediate techniques in clinical imaging, radiopharmaceutical preparation, computer techniques and radiation health physics. Students will be evaluated during each assigned clinical rotation during the semester.

NMT 4294 Instrumentation I. Principles of operation and quality control of non-imaging nuclear medicine radiation detection equipment to include a section on statistics as they apply to the practice of nuclear medicine technology. Correlation with the clinical experience included.

NMT 4302 Instrumentation II. Principles of operation and quality control of collimated imaging radiation detectors.

NMT 4084 Diagnostic Nuclear Medicine I. Comprehensive study of the theory and methodology of imaging the different systems in the body, including rationale and indications for the study, patient preparation, radiopharmaceuticals used, imaging techniques, computer processing applications and diagnostic interpretation. Each section will be correlated with clinical exams performed in the clinical setting.

NMT 4093 Diagnostic Nuclear Medicine II. Continuation of Diagnostic Nuclear Medicine I.

NMT 4104 Diagnostic Nuclear Medicine III. Continuation of Diagnostic Nuclear Medicine II.

NMT 4113 Diagnostic Nuclear Medicine IV. Comprehensive study of the theory and methodology of various in vitro procedures such as the Red Cell Mass, RISA Plasma Volume, Red Cell Survival Study and Splenic Sequestration Study. Includes monoclonal antibody imaging, somatostatin-receptor imaging and radiolabeled peptide imaging procedures, PET/CT as well as other oncological diagnostic imaging studies. Correlation with the clinical experience included.

NMT 4404 Nuclear Physics Radiochemistry. Fundamentals of basic atomic and nuclear physics, including the structure of the atom, modes of radioactive decay, mathematical calculations of radioactivity, passage of

charged particles and high energy photons through matter, and the primary and secondary sites of radionuclide production.

NMT 4703 Radiation Health Physics. Principles involved in minimizing exposure to patient, personnel, self and environment are discussed. Included are techniques for measuring levels of radioactive contamination, procedures for decontamination and a general overview of both national and state government regulatory issues regarding exposure and radioactive material handling. Correlation with the clinical laboratory experience included.

NMT 4411 Medical Terminology. Introductory course in the basics of building, spelling, and pronouncing medical words designed as a self-directed course.

NMT 4421 Medical Ethics & Law. Medicolegal and ethical principles involved in the practice of Nuclear Medicine Technology. Topics covered include the code of ethics and the legal implications of negligence in the clinical nuclear medicine setting.

NMT 4432 Patient Care. This course on patient care is presented in individual sections, taught by professionals and specialists in the particular topic. The course covers the principles and techniques of patient care, including cardiopulmonary resuscitation (CPR) certification, patient transport, ECG monitoring, physical assessment, pharmacology, venipuncture and I.V. therapy. Emphasis is placed on skills that are used by the technologist in the clinical setting.

NMT 4504 Radiopharmacy/Radionuclide Therapy. Fundamental principles of radiopharmacology, including radiopharmaceutical preparation and quality control, biochemical and physiological properties of radiopharmaceuticals, methods of localization and alterations of distribution, and the therapeutic use of radionuclides in nuclear medicine. Correlation with the clinical laboratory experience included.

NMT 4452 Computed Tomography. Emphasis will be placed on the operation and quality control of both Single Photon Emission Tomography (SPECT), Positron Emission Tomography (PET), and Computerized Tomography (CT). Basic principles and concepts of the modern computer, with emphasis on the application of computers and data processing in the Nuclear Medicine Department. Correlation with the clinical experience included.

NMT 4461 Radiobiology. Biological effects of the exposure of living tissue to ionizing radiation, including chronic and acute effects, the relative sensitivity and resistance of organ systems, and cellular and systematic response of tissue to radiation.

NMT 4601 Senior Seminar. Topics covered include medical informatics, healthcare administration and health sciences research methods as they relate to the field of Nuclear Medicine Technology.