



# NORTHEASTERN STATE UNIVERSITY

## College of Science & Health Professions

### Pre-Medical Imaging & Radiation Sciences at OUHSC

The Pre-Medical Imaging & Radiation Sciences program is designed to meet the requirements of the University of Oklahoma Health Sciences Center Bachelors Degree BSMIR in the areas of Radiography, Nuclear Medicine, Radiation Therapy, and Sonography. Selection of students is competitive and is made on the basis of academic achievement, interview performance and knowledge of healthcare services. The applicant must have completed a minimum of 64 hours with a minimum GPA of 2.5 on a 4.0 scale.

#### MINIMUM REQUIREMENTS:

		<u>Hours</u>	<u>Completed</u>
English 1113	Freshman Composition I	3	<input type="checkbox"/>
English 1213	Freshman Composition II	3	<input type="checkbox"/>
English 3083	Technical Writing	3	<input type="checkbox"/>
CS 1003 or MIS 1133	Computers in Modern Society	3	<input type="checkbox"/>
History 1483 or 1493	American History 1492–1876 or Since 1876	3	<input type="checkbox"/>
Mathematics 1513	College Algebra	3	<input type="checkbox"/>
Political Science 1113	American Federal Government	3	<input type="checkbox"/>
Psychology 1113	General Psychology	3	<input type="checkbox"/>
Science 3113	Science & Medical Terminology	3	<input type="checkbox"/>
Sociology 1113	Introduction to Sociology	3	<input type="checkbox"/>
<b><u>Life Sciences</u></b>			
Biology 1123	Evolution & Diversity	3	<input type="checkbox"/>
Biology 1131	Investigative Laboratory	1	<input type="checkbox"/>
Biology 2154	Human Anatomy	4	<input type="checkbox"/>
Biology 3314	Human Physiology	4	<input type="checkbox"/>
Chemistry 1123, 1131	General Chemistry I (Lecture & Lab)	4	<input type="checkbox"/>
Physics 1115	General Physics I	5	<input type="checkbox"/>
<b><u>Humanities</u></b>			
History 1113 or 1213	Early Western Civilization or Modern	3	<input type="checkbox"/>
Select one of the following *Non Western Culture Classes		3	<input type="checkbox"/>
Soc 4153, Soc 3123, Mus 3861, Mus 3852, Hist 4653, Engl 4883, Art 3013, Anth 4153, or Anth 3123 or Anth 2223			
Select one of the following *Artistic Forms classes		3	<input type="checkbox"/>
Thtr 2843, Thtr 2763, Mus 3002, Mus 2543, Hum 2843, Hum 2763, Engl 3033, Art 4453, Art 3223, or Art 3213			

\*Students must take at least one upper division General Education course.

\*Additional General Education courses required for students beginning college education fall 1990 or later. See OUHSC website for general education: [www.ou.edu/admrec/tetables.htm](http://www.ou.edu/admrec/tetables.htm)

Foreign Language Requirement: 2 courses in same language or 2 years of same language in high school

**ELECTIVES:** Remaining hours needed to equal **64 hours**

For additional information contact  
**PRE-HEALTH PROFESSIONS ADVISING**  
 Dr. Craig Clifford  
 Science Building Room 141  
 918-444-3002  
[Clifford@nsuok.edu](mailto:Clifford@nsuok.edu)

## ADDITIONAL INFORMATION

The Department of Medical Imaging and Radiation Sciences offers a four-year baccalaureate degree in Medical Imaging and Radiation Sciences with programs in the areas of Radiography, Nuclear Medicine, Radiation Therapy, and Sonography (Ultrasound). Students apply to the professional phase of the program after first completing a freshman and sophomore year (or 64 hours) of general education inclusive of the pre-requisites for the programs. The four-year program culminates with a Bachelor of Science Degree in Medical Imaging and Radiation Sciences (B.S.)

### **Radiography**

The Radiographer positions the patient and translates a high tech imaging process into a humane experience for the patient to obtain satisfactory radiographs, which are then interpreted by the physician to diagnose disease. Radiographers may operate a wide variety of photographic and electronic imaging equipment and computers. Radiographers also make images in highly specialized studies in which internal organs are made visible in moving and stationary images used for medical diagnosis.

### **Radiation Therapy**

The Radiation Therapist is in daily contact with the cancer patient. Radiations are directed at diseased tissues in strictly controlled circumstances to cure or to palliate the disease. The therapist positions the patient for treatment, performs mathematical calculations of radiation dosage, and operates a variety of ionizing radiation producing equipment.

### **Nuclear Medicine**

Nuclear Medicine is a specialty which uses radiopharmaceuticals, cameras, and computers to image and quantify various physiological processes in any organ system in the body. The nuclear medicine technologist administers radiopharmaceuticals to patients, positions them for images, and operates the cameras and computers. The images and data technologists obtain from studies provide physicians with information on disease processes affecting organ function. The program includes instruction in general and cardiac nuclear imaging along with radio pharmacy and radioimmunoassay.

### **Sonography (Ultrasound)**

The Sonographer uses equipment, which generates high frequency sound waves to produce images of the human body. Using these procedures, the sonographer gathers data for interpretation and evaluation by the physician. Areas include Diagnostic Abdominal Sonography, Neurosonography, Echocardiography, Obstetrical and Pelvic Sonography, Vascular Doppler Evaluation, and others. In each of these areas, the Sonographer must be knowledgeable of expected Pathology, applicable instrumentation and results.

### **Employment Opportunities**

Employment in the field of Medical Imaging and Radiation Sciences is expected to grow much faster than the average for all occupations because of the importance of these technologies in the diagnosis and treatment of disease. Radiology is a dynamic field with clinical potential. New uses of imaging equipment are certain to increase demand for professionals in all categories. In the treatment area, radiation therapy will continue to be used alone or in combination with surgery or chemotherapy to treat cancer. New advance modalities promise to change the way some diseases are managed. Positron Emission Tomography (PET) images the function of the brain, and Magnetic Resonance Imaging (MRI), which utilizes high frequency radio waves and magnetic fields, are two examples. Radiographers, Nuclear Medicine Technologists, Radiation Therapists, and Sonographers will continue to be at the growing edge of medicine and health care.

### **Application Requirements**

Admission to the program requires completion of pre-requisite course work and submission of all application materials. The Department Admissions Committee will review application materials and may require additional information from each applicant such as a personal interview, and/or testing scores. Applicants are considered for the summer semester only. To be considered for admission an applicant must:

1. Have successfully completed, or be in the process of completing a minimum of sixty-four (64) semester hours of course work, from any accredited college or university, prior to matriculation to the program.
2. Be in good standing with the college or university last or currently attending.
3. Submit a completed University of Oklahoma Health Sciences Center online application and supplemental documents with fees. Submit official transcripts in a sealed envelope from all colleges or universities attended prior to March 1 of the year in which admission is sought.
4. Have a minimum grade point average of 2.5 on a 4.0 scale of all college work attempted. Average science/math GPA 3.6.
5. Have successfully completed, or be in the process of completing, the courses listed on the front of this form. These pre-requisites are the same for all departmental programs. At the time of application to the Health Sciences Center, students indicate the program of their choice. Any exceptions or substitutions must be approved by the program director, department chairperson and college dean. To search for transferable courses, use the web-based prerequisite finder: <http://www.ah.ouhsc.edu/prereqs/>

Contents of this publication are subject to revision without notice. The provisions of this publication do not constitute a contract, expressed or implied between any applicant, student, or faculty member of the College of Allied Health.

**For more information about Radiologic Technologists and Medical Imaging programs:** [www.asrt.org/](http://www.asrt.org/)

**For Medical Imaging and Radiation Sciences information and application materials from OUHSC contact:** Professor Vesper Grantham (405) 271-6477. University of Oklahoma Health Sciences Center, Medical Imaging and Radiation Services, 1200 N. Stonewall, Oklahoma City, Oklahoma 73190

OUHSC Medical Imaging and Radiation Sciences Site: <http://www.ah.ouhsc.edu/mirs/default.asp>