

Program Information

Radiation Sciences

Career Information

The Radiography curriculum prepares the graduate to be a radiographer; a skilled health care professional that uses radiation to produce images of the human body. Course work includes clinical rotations to area health care facilities, radiographic procedures, radiographic exposure, pathology, physics, patient care and management, radiation protection, quality assurance, anatomy and physiology, and radiobiology. Graduates are eligible to apply to take the American Registry of Radiologic Technologists' national examination for certification and registration. Graduates of the program are employed in hospitals, clinics, physician's offices, medical laboratories, government agencies and industry.

Admission Requirements

Students must adhere to all the admission policies and requirements of the School in addition to the following:

- Graduate of an accredited high school or GED (General Equivalency Diploma).
- Successful completion of high school Algebra I, Algebra II or Geometry, and Biology.
- Successful completion of a course in medical terminology either at a post-secondary school or an online course.
- Successful completion of the following college course with a GPA of 2.5 or greater: Anatomy & Physiology I & II, English Composition General Psychology

or General Sociology, and College Algebra or Computer Science.

- Pre-admission entrance test (\$35 fee payable on the date of testing). Applicants must achieve High School level or greater on the Reading Comprehension and Essential Math Skills sections of the HOBET (Health Occupations Based Entrance Test).
- Personal interview and tour.
- Negative drug screen and criminal background history.
- Applicants who are not U.S. citizens by birth must provide immigration or citizenship documentation.

Pre-Admission testing is scheduled based upon the following:

- Completed application;
- Non-refundable \$35 application fee;
- Official transcripts from high school or GED documentation;
- Official transcripts from all colleges/universities attended;
- SAT scores (if available);
- TOEFL scores (if applicable);
- Personal interview with a member of the Admissions Committee will be scheduled with applicants who have scored successfully on the pre-admission entry exam and have met all other required criteria.

Following acceptance into the program, the student must complete a health history, provide evidence of immunization and/or immunization titers for measles,

mumps, rubella (MMR) and Varicella, and verify compliance with the Core Performance Standards for Radiation Science.

An applicant who meets all admission requirements is not automatically guaranteed admission to the program. Admission is based in part upon space availability. The School reserves the right to immediately dismiss any applicant who have falsified their application, have unsatisfactory criminal background checks, prior felony convictions, positive drug screens, or they miss the deadline for screening.

Students should be aware that they will be required to provide evidence of a health history, immunization and/or immunization titers, submit to drug screenings and undergo criminal and child protective services background checks, and verify Core Performance Standards required by the Radiation Science Program. Students who refuse to offer this information will be denied entry into the Radiation Science Program.

Completion of course work and/or graduation from the program does not guarantee that a student will be eligible to sit for the Registry Exam. Students who may have questions regarding the criminal background checks need to contact the Program Director for Radiation Science.

Program of Studies

SOUTHSIDE REGIONAL MEDICAL CENTER RADIATION SCIENCES PROGRAM 2008 - 2010

Prerequisites: (19 credits)

- ▶ Biology 205/206 (Human Anatomy & Physiology I & II) - 8 credits
- ▶ Biology 111 (Medical Terminology) - 2 credits
- ▶ English 101 (Introduction to Literary Genres) - 3 credits
- ▶ Mathematics 101 (College Algebra) - 3 credits
- ▶ Psychology 201/210 (General Psychology) - 3 credits

Term 1

CSCI 202 (Introduction to Microcomputers) - 3 credits
 Radiologic Technology 101 - 2 credits
 Radiologic Technology 110 - 3 credits
 Radiologic Technology 120 - 5 credits
 Radiologic Technology 150 - 3 credits

Term 1 Total - 16 credits

Term 2

English 102 (Introduction to Literary Genres) - 3 credits
 Radiologic Technology 121 - 5 credits
 Radiologic Technology 161 - 3 credits
 Radiologic Technology 151 - 4 credits

Term 2 Total - 15 credits

Term 3

Philosophy 203 (Introduction to Ethics) - 3 credits
 Radiologic Technology 122 - 2 credits
 Radiologic Technology 152 - 5 credits
 Radiologic Technology 171 - 2 credits

Term 3 Total - 12 credits

Term 4

Social Science Elective - 3 credits
 Radiologic Technology 261 - 3 credits
 Radiologic Technology 223 - 2 credits
 Radiologic Technology 250 - 5 credits
 Radiologic Technology 272 - 3 credits

Term 4 Total - 16 credits

Term 5

Radiologic Technology 230 - 3 credits
 Radiologic Technology 251 - 5 credits
 Radiologic Technology 273 - 3 credits
 Radiologic Technology 281 - 1 credit

Term 5 Total - 12 credits

Terms 1, 2, 4, & 5 are 15 weeks each and Term 3 is 12 weeks.

All courses listed above are required program courses.

An elective course may be taken each semester in order to fulfill RBC A.S. degree requirements.

Radiation Science Program Course Descriptions

RadT 101 (Introduction to Radiography)

An overview of radiography, its history, and its relationship to other health care services including the organization of the hospital and the radiology department. Available career opportunities and the medical imaging modalities are presented. Basic radiation protection procedures required for safe use of ionizing radiation are emphasized as well as professional adjustment and ethical issues. (2 credits, 30 hours lecture)

RadT 110 (Introduction to Patient Care & Pharmacology)

The presentation of patient care and procedures for general care of patients in radiography and other imaging modalities including the discussion of patients with special needs. A study of aseptic technique, venipuncture technique, contrast medias and the procedures utilizing contrast medias. Basic information of current drug therapy is discussed. An online medical terminology course is included. (3 credits, 45 hours lecture)

RadT 120, 121, 122, 223 (Radiographic Anatomy & Procedures I, II, III, IV)

A presentation of positioning terminology followed by a study of various radiographic procedures for patients age categories. Emphasis is on general and fluoroscopic radiographic examinations with surgical, pediatric, trauma, and mobile radiography. Cross sectional anatomy is presented. Includes laboratory demonstration, practice and

competency based examinations of material presented in the classroom. (14 total credits, RadT 120 & 121 each = 45 hours lecture / 90 hour lab; RadT 122 & 123 each = 20 hours lecture/ 30 hours lab)

RadT 150, 151, 152, 250, 251 (Clinical Radiography I, II, III, IV, V)

Clinical experience of radiographic procedures in the general, fluoroscopic, surgical and mobile areas as well as rotations through the various imaging modalities. The clinical rotations reflect the information presented in the classroom and allows the student to put to practice the theoretical knowledge acquired in the classroom. Clinical assignments include laboratory practice, laboratory competencies, clinical competencies, radiographic critique sessions and professional journal articles. (22 total credits, 45 hours clinical/ credit/semester)

RadT 261 (Radiation Biology & Protection)

A study of the sources of radiation, the quantities and units in measuring and detecting radiation, the basic interaction of radiation with matter and the biological effects of ionizing radiation. The need for radiation protection and the methods for protecting the patient and personnel are discussed. (3 credits, 45 hours lecture)

RadT 161, 171, 272, 273 (Medical Imaging I, II, III, IV)

A review of basic mathematical principles followed by a study of the prime factors affecting the quality of the radiographic image. The basic principles of mechanics, structure of matter, electrostatics,

magnetism, electromagnetism and rectification is presented. The study of the chemistry of radiographic film and film processing, departmental design as related to processing and radiographic artifacts. The properties of x-rays, x-ray tubes and equipment, x-ray circuitry, the production of radiation and its interaction with matter are discussed in detail. The presentation of the factors affecting image quality and how to manipulate these factors to produce the best radiographic image. The design, operation and function of the various imaging systems in radiography and medical imaging are presented in depth. Includes the use of computers in medical imaging procedures. The study of the quality assurance and control procedures and requirements in medical imaging are presented. The last section (IV) gives the student the opportunity to pull together all the knowledge and experiences acquired over the previous eighteen months through online review and mock registry examinations. (11 total credits, 15 hours lecture/ credit/ semester)

RadT 230
(Radiographic Pathology)

A study of nature and etiology of disease, the changes that occur through disease and trauma and the conditions of illness particular to various body systems with correlation to the radiographic image. (3 credits)

RadT 281
(Independent Research Project)

The student has the opportunity to investigate a modality or a medical imaging issue in depth. Methods to research aspects of medical imaging are discussed to assist with a written research paper which will also be presented in class. Opportunity for growth and career development is discussed along with continued education. Registration, licensure and certification requirements of the radiographer are presented in detail. (1 credit)