RADIOLOGIC TECHNOLOGY

RTE 1000, Introduction to Diagnostic Imaging Introduction to Diagnostic Imaging
2 hrs., 2 crs.,
(Offered spring). Prerequisite: RTE1111C. This course covers the organization and operation of a medical imaging department. Radiologic topics include: x-ray equipment operation, historical aspects of radiography, department organizational structure, safety, radiation protection, pharmacology, infection control, aseptic and nonaseptic techniques, medical law, professional ethics and conflict resolution, health records, professional development, certification, and accreditation.

RTE 1111C, Introduction to Patient Care Introduction to Patient Care
2 hrs., 2 crs.,
$5.00 lab fee. (Offered fall). Prerequisite: Program admission. An introduction to the principles and practices of patient care during radiographic examinations. Topics include medical legal issues, patient assessment and communication, patient care and safety, infection control, surgical asepsis, vital signs and oxygen administration, electrocardiography, medical emergencies, trauma and mobile considerations, and the care of pediatric and geriatric patients.

RTE 1418, Principles of Radiographic Exposure I Principles of Radiographic Exposure I
3 hrs., 3 crs.,
(Offered fall). Prerequisite: Program admission. The fundamentals of atomic structure, magnetism, electricity, and radiation physics as they relate to the principles of x-ray production will be presented. Topics include the factors that govern and influence the production of an image, image acquisition, and image receptor systems. Also, technical factors of image quality including theory and application of exposure factors, intensifying screen, radiographic film, filtration, and beam limitation will be presented.

RTE 1457, Principles of Radiographic Exposures II Principles of Radiographic Exposures II
4 hrs., 4 crs.,
(Offered spring). Prerequisite: RTE1418. A continuation of RTE 1418 with emphasis on computerized and digital radiography principles and equipment operations, picture archiving and communication systems, digital receptors, image acquisition and analysis, fluoroscopy equipment, quality control, advancements in medical imaging, and continuous quality improvement.

RTE 1503, Radiographic Positioning and Procedures I Radiographic Positioning and Procedures I
3 hrs., 3 crs.,
(Offered fall). Prerequisite: Program admission. Corequisite: RTE1503L. This course is designed to prepare the student for practical experience in the clinical setting. Topics include basic anatomy and radiographic positioning of the human body in examination of the chest, abdomen, upper extremities, humerus, and shoulder girdle. Special considerations for pediatric patients and geriatric patients will be discussed. Additionally, the student will be introduced to mobile exams, trauma situations, and cross-anatomy of the chest, abdomen, upper extremities, humerus, and shoulder girdle as seen in the transverse, coronal, and sagittal planes using CT and MRI images.

RTE 1503L, Radiographic Positioning and Procedures Lab I Radiographic Positioning and Procedures Lab I
2 hrs., 1 cr.,
(Offered fall). Prerequisite: Program admission. Corequisite: RTE1503. Practical application of theory taught in RTE 1503 class. Students practice positioning techniques relating to radiography of the chest, abdomen, upper extremities, humerus and shoulder girdle. Special considerations for pediatric patients, geriatric patients, mobile exams, and trauma situations will be discussed.

RTE 1513, Radiographic Positioning and Procedures II Radiographic Positioning and Procedures II
3 hrs., 3 crs.,
(Offered spring). Prerequisite: RTE1503. Corequisite: RTE1513L. This course is designed to prepare the student for practical experience in a clinical setting. Topics include basic anatomy and radiographic positioning of the human body in examination of the lower extremities, pelvic girdle, spine, and bony thorax. Special considerations for pediatric patients and geriatric patients will be discussed. Additionally, the student will be introduced to mobile exams, trauma situations, and cross-sectional anatomy of the lower extremities, pelvis, spine, and bony thorax as seen in the transverse, coronal, and sagittal planes using CT and MRI images.

RTE 1513L, Radiographic Positioning and Procedures Lab II Radiographic Positioning and Procedures Lab II
2 hrs., 1 cr.,
(Offered spring). Prerequisite: RTE1503L. Corequisite: RTE1513. The student will demonstrate in a laboratory setting basic anatomy, terminology, and radiographic positioning of the human body as it relates to radiographic examinations of the spine, ribs, bony thorax, lower extremities and shoulder girdle. Discussion includes trauma radiography along with the application of radiographic equipment and technical exposure factors for the exams presented. Special considerations for pediatric patients, geriatric patients, and trauma situations will be discussed.

RTE 1523, Radiographic Positioning and Procedures III Radiographic Positioning and Procedures III
2 hrs., 2 crs.,
(Offered summer). Prerequisite: RTE1513. Corequisite: RTE1523L. This course is designed to prepare the student for practical experience in the clinical setting. Topics include basic anatomy and radiographic positioning of the human body in examination of the head and upper and lower gastrointestinal systems. Special considerations for geriatric and pediatric patients will be discussed. Additionally, the student will be introduced to mobile exams, trauma situations, and cross-sectional anatomy of the head and upper and lower gastrointestinal systems as seen in the transverse, coronal, and sagittal planes using CT and MRI images.

RTE 1523L, Radiographic Positioning and Procedures Lab III Radiographic Positioning and Procedures Lab III
2 hrs., 1 cr.,
(Offered summer). Prerequisite: RTE1513L. Corequisite: RTE1523. Practical application of theory taught in RTE 1523. Students practice positioning techniques relating to radiography of the skull, facial bones, sinuses, and upper and lower gastrointestinal systems. Special considerations for pediatric patients, geriatric patients, mobile exams, and trauma situations will be discussed.

RTE 1804, Clinical Education I Clinical Education I
14.4 hrs., 3 crs.,
$98.00 lab fee. (Offered fall). Prerequisites: Current certification in cardiopulmonary resuscitation, all required program immunizations, physical exam report on file in the document management system. Corequisite: RTE1111C. (216 total clinical hours). Observation and application of health care principles will be the focus of this clinical rotation. The student will spend time orienting to the medical facility, learning to understand the departmental process and procedures, and becoming familiar with the flow of the radiology department. The student will begin to apply the radiographic principles and skills taught in RTE1503 and will perform exams under direct and indirect supervision of a clinical preceptor.

RTE 1814, Clinical Education II Clinical Education II
14.4 hrs., 3 crs.,
(Offered spring). Prerequisite: RTE1804. (216 total clinical hours). Observation and application of the primary healthcare principles will be the focus of this clinical rotation. The student will begin to apply the radiographic principles and skills taught in RTE1503 and RTE1513 and will perform exams under direct and indirect supervision of a clinical preceptor.

RTE 1824, Clinical Education III Clinical Education III
19.2 hrs., 4 crs.,
(Offered summer). Prerequisites: RTE1814. (288 total clinical hours). Observation and application of the primary of healthcare principles will be the focus of this clinical rotation. The student will continue to build on the radiographic principles and skills taught in RTE1503 and RTE1513. In addition, the student will begin applying the principles taught in RTE1523 and will perform exams under direct and indirect supervision of a clinical preceptor.

RTE 2061, Radiography Seminar Radiography Seminar
2 hrs., 2 crs.,
(Offered spring). Prerequisite: RTE2834. An in depth review of American Registry of Radiologic Technology (ARRT) certification in Radiologic Science. Emphasis is placed on patient care, radiation protection, equipment operation and maintenance, image production and evaluation, and overall radiographic procedure.

RTE 2385, Radiobiology and Radiation Protection Radiobiology and Radiation Protection
3 hrs., 3 crs.,
(Offered fall). Prerequisite: RTE1457. The student will study the interactions and effects of ionizing radiation on cells, tissues, and the human body. In addition, the student will learn the principles of radiation protection and the safety requirements of regulatory agencies related to radiography.

RTE 2563, Advanced Medical Imaging Advanced Medical Imaging
3 hrs., 3 crs.,
(Offered fall). This course prepares the student to perform trauma, mobile, urinary, and advanced medical imaging exams. Students will learn how to perform venipuncture in this course. This course introduces the student to advanced imaging modalities in procedures and introduces the student to advanced imaging modalities in computerized tomography, magnetic resonance imaging, ultrasonography, nuclear medicine, surgical radiography, mammography, bone densitometry, interventional vascular imaging, cardiovascular imaging and radiation therapy. In addition, the topic of artificial intelligence in medical imaging will be introduced.

RTE 2584, Mammography Mammography
3 hrs., 3 crs.,
(Offered fall). This course is offered to registered radiographers, in good standing with the American Registry of Radiologic Technologists (ARRT) and to radiography students currently enrolled in the radiography program. This course is designed to fulfill the 45 hours of mammography education required by the ARRT to be eligible to apply for the national certification in Mammography. The course covers the anatomy and pathologies of the breast identified through imaging, routine and special imaging projections of the breast to include proper exposure factors, radiation safety, and the components and procedures of a quality assurance program.

RTE 2762, Sectional Anatomy Sectional Anatomy
3 hrs., 3 crs.,
(Offered spring). Prerequisites: BSC2086, BSC2086L. Identification of normal and abnormal anatomic structures of the skull, neck, thorax, reproduction, central nervous, cardiovascular, and musculoskeletal systems by the use of cross-sectional imaging modalities.

RTE 2782, Radiographic Pathology Radiographic Pathology
2 hrs., 2 crs.,
(Offered spring). Prerequisite: RTE1111. The objective of this course is to introduce the disease processes most frequently encountered in the radiology department. The etiology, pathogenesis, treatment, and resolution of each disease is discussed with an attempt to relate recent advances in these areas. Emphasis is placed on radiologic diagnosis and the relationship of the radiographic appearance of the disease to its anatomic, physiologic, and pathologic characteristics.

RTE 2834, Clinical Education IV Clinical Education IV
24 hrs., 5 crs.,
$81.00 lab fee. (Offered fall). Prerequisites: RTE1824. Observation and application of primary healthcare principles is the focus of this clinical rotation. The student will continue to build on the radiographic principles and skills taught in RTE 1503, RTE 1513, and RTE1523 and will perform exams under direct and indirect supervision of a clinical preceptor. In addition, the student will begin clinical rotations into the surgical suite and computed tomography.

RTE 2844, Clinical Education V Clinical Education V
24 hrs., 5 crs.,
(Offered spring). Prerequisite: RTE2834. Observation and application of primary healthcare principles will be the focus of this clinical rotation. The student will continue to build on the radiographic principles and skills taught in RTE 1503C, RTE 1513C, and RTE 1523C and perform exams under direct and indirect supervision of a clinical preceptor. In addition, the student will begin clinical rotations into advanced imaging modalities for observation only.