

RADT - 1003 Radiation Physics, 3.00 Credits

Level: Lower

This course is designed to provide a basic knowledge of the principles of physics as it pertains to radiation especially ionizing radiation used in the clinical setting. Fundamental physics principles, units, measurements, atomic structure, and types/properties of radiation are emphasized, in particular ionizing radiation. Other topics presented include the fundamental X-ray circuit components as well as X-ray production by the X-ray tube.

RADT - 1004 Fundamentals of Radiologic Sci, 4.00 Credits

Level: Lower

This course is designed to provide a general overview of the study of radiologic science and the role it serves in the health care delivery system. Several key topics in imaging including introductory principles of radiography, basic radiation protection, discipline terminology, radiology specialties and careers in the profession will be explored. The course will also include a dialogue of medical legal ethics and the radiographer's role in making ethical decisions. Patient care topics including transfer techniques, patient history and vital signs, infection control, sterile techniques, medical emergencies and basic pharmacology will be presented. Finally, cultural awareness and the radiographer's role in a multicultural health care setting will be discussed.

RADT - 2003 Radiobiological Protection, 3.00 Credits

Prerequisite(s): RADT 1003 with C or better

Level: Lower

This course provides the characteristics of ionizing radiation and the biological effects that radiation produces in human tissues. Principles of ionizing radiation including basic interactions of radiation and matter, radiation quantities, units and dose limits for exposure, radiation protection for patients and employees as well as radiation monitoring devices are all discussed. In addition emphasis will be placed upon biological interactions with radiation, early and late effects of ionizing radiation on tissue, and radiation pathology.

RADT - 2013 Radiographic Exposure & Quality, 3.00 Credits

Prerequisite(s): RADT 1004 with C or better and RADT 1003 with C or better and RADT 2014 with C or better *

Level: Lower

This course is designed to provide fundamental principles of radiographic exposure. These principles include the radiographic factors; density, contrast, recorded detail and distortion that affect and influence the radiographic image and the technique compensation necessary to produce a diagnostic image as these factors change. Digital image acquisition and film screen imaging as well as film processing are also discussed. The fundamental criteria of image analysis and evaluation of quality diagnostic imaging are emphasized.

RADT - 2014 Radiographic Procedures I, 4.00 Credits

Prerequisite(s): RADT 1003 with C or better and RADT 2013 with C or better *

Level: Lower

Applied Learning-Practicum

This course provides the theoretical basis for performing radiographic procedures with specific patient positioning instruction in the laboratory. The examination protocols and imaging evaluation for the thoracic cavity, abdominal cavity, upper extremities and lower extremities will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice in the laboratory. Image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

RADT - 2041 Radiology Clinical I, 1.00 Credit

Prerequisite(s): RADT 1003 with C or better and RADT 2014 with C or better * and RADT 2003 with C or better * and RADT 2013 with C or better *

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance

This course is designed to provide an introduction to the radiology department and patient care routines. The students will develop the basic skills necessary for a professional healthcare worker and will achieve competency in required diagnostic procedures established for the Radiologic Technology Program. Performance assessment in the clinical setting will provide the foundation to build clinical skills necessary to be successful in the field. This clinical experience consists of 120 hours, which will be completed 8 hours per week for 15 weeks.

RADT - 2044 Radiology Clinical II, 4.00 Credits

Prerequisite(s): RADT 2003 with C or better and RADT 2014 with C or better and RADT 2041 with C or better

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance

This course allows for the continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in radiography is the focus of this clinical experience. Continued assessment of learning and proficiency is conducted using summative competencies and intermediate level learning objectives during the clinical rotation. This clinical experience consists of 480 hours, which will be completed 40 hours per week for 12 weeks.

RADT - 3014 Radiographic Procedures II, 4.00 Credits

Prerequisite(s): RADT 2014 with C or better and RADT 2013 with C or better

Level: Lower

Applied Learning-Practicum

This course provides the theoretical basis for performing radiographic procedures with specific patient positioning instruction in the laboratory. The examination protocols and imaging evaluation for fluoroscopy, the skull, special views of the upper extremities and lower extremities, special views of the spine, bone surveys, arthrograms, pediatric and geriatric procedures, and trauma radiography will be introduced. The laboratory setting will reinforce the theoretical foundation of the lecture through demonstration, role playing and skill practice. Image analysis will be included and require problem solving and critical thinking skills to evaluate diagnostic quality of the images obtained in the laboratory.

RADT - 3023 Diagnostic Imaging I, 3.00 Credits

Prerequisite(s): RADT 2014 with C or better and RADT 3043 with C or better *

Level: Lower

This course provides an overview of the specialized imaging system of computed tomography (CT) including sectional anatomy. Essential concepts of tomography and CT including multi-slice spiral CT will allow for proficiency in performing and understanding this advanced imaging technology. Basic CT protocols will be presented along with corresponding cross sectional anatomy to enhance learning of this advanced imaging modality. This course will allow for completion of specific CT examination competencies during the clinical experience.

RADT - 3043 Radiology Clinical III, 3.00 Credits

Prerequisite(s): RADT 2044 with C or better and RADT 3014 with C or better *

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance

This course provides ongoing experience in the radiology department clinical setting allowing implementation of advanced learning objectives and skills. This course allows for continued progression of skills in the clinical setting. Procedural competence and the acquisition of additional proficiencies in radiography is the focus. Continued assessment of learning and proficiency is conducted using summative competencies and advanced level learning objectives. This clinical experience consists of 360 hours, which will be completed 24 hours per week for 15 weeks.

RADT - 4003 Intro to Adv Diagnostic Imagin, 3.00 Credits

Prerequisite(s): RADT 3023 with C or better and RADT 4023 with C or better *

Level: Lower

This course introduces the many advanced imaging modalities that are included in the radiology department. Computer tomography (CT) and its operation is discussed along with department archival systems and digital medical image storage. The course then introduces basic mechanisms of image acquisition, basic operating principles and applications for the advanced imaging modalities of magnetic resonance imaging (MRI), nuclear medicine, positron emission tomography (PET) and single-photon emission computed tomography (SPECT) imaging, ultrasound, radiation therapy and interventional radiography including arteriograms, cardiac angiography and venograms.

RADT - 4013 Prof Development in Imaging Sc, 3.00 Credits

Level: Lower

This course is an overview of the radiographer's continued professional development. The course is designed to encourage active participation in professional organizations and a development of lifelong learning. The course will culminate in a senior research project and presentation on a topic within the field of radiologic science and imaging.

RADT - 4023 Diagnostic Imaging II, 3.00 Credits

Prerequisite(s): RADT 3023 with C or better and RADT 3043 with C or better

Level: Lower

This course provides an overview of the functional imaging equipment components, operational principles and clinical applications of conventional and digital fluoroscopy systems. Emphasis will be given to dynamic imaging of various body systems and its use in advanced interventional procedures. Imaging system quality assurance and quality control procedures are also introduced as each relates to imaging equipment and patient safety.

RADT - 4043 Radiology Clinical IV, 3.00 Credits

Prerequisite(s): RADT 3014 with C or better and RADT 3023 with C or better and RADT 3043 with C or better

Level: Lower

Applied Learning-Clinical Plcm, Clinical Liability Insurance

This course is designed to allow for expanded experience in radiology by implementing advanced proficiencies in the clinical setting. Various imaging modalities will be introduced and experienced including computed tomography (CT) scanning, special procedures, magnetic resonance imaging (MRI), nuclear medicine and ultrasound. Procedural competencies and characteristics of an entry-level radiographer will be demonstrated at the conclusion of this final clinical experience as documented by the terminal competencies and mastery level objectives. This clinical experience will consist of 360 hours, which will be completed 24 hours per week for 15 weeks.

RADT - 4900 Directed Study, 1.00 Credit

Prerequisite(s): RADT 3043 with D or better

Level: Lower

This course is an elective course designed to allow students to pursue advanced work in radiologic technology or obtain extended clinical opportunities. A student may contract for one credit hour of independent study through an arrangement with the clinical coordinator, who agrees to direct such a study. Enrollment is limited by clinical site participation.