RADIOGRAPHY TECHNOLOGY (RADT)

RADT-111 Introduction to Radiography
5 Credits
Lecture: 3 hours per week, **Lab:** 6 hours per week
Offering: Fall Only, Odd Years
This course orients students to the radiographic profession and introduces a grouping of fundamental principles, practices, and issues common to many specializations in the healthcare profession. In addition to the essential skills, students explore various healthcare delivery systems and related issues. Emphasis will be placed on patient care with consideration of both physical and psychological conditions. Topics covered in this course include: ethics, medical and legal considerations, Right to Know Law, professionalism, basic principles of radiation protection, basic principles of exposure, equipment introduction, health care delivery systems, hospital and departmental organization, hospital and technical college affiliation, medical emergencies, pharmacology/contrast agents, media, OR and mobile procedures patient preparation, death and dying, body mechanics/ transportation, and patient care in radiologic sciences.
Prerequisites: BIOL-227, BIOL-228, CAOT-179, COMM-101, ENGL-101, GEM 3, PSYC-101 or SOC-101
Corequisites: RADT-111L, RADT-112, RADT-113

RADT-111L Introduction to Radiology Lab
0 Credits
Lab: 4 hours per week
Offering: Fall Only, Odd Years
This course is a corequisite lab for RADT-111.
Corequisites: RADT-111

RADT-112 Radiographic Procedures I
4 Credits
Lecture: 3 hours per week
Offering: Fall Only, Odd Years
This course introduces the knowledge required to perform radiologic procedures applicable to the human anatomy. Emphasis will be placed on the production of quality radiographs, and laboratory experience will demonstrate the application of theoretical principles and concepts. Topics include: introduction to radiographic procedures; positioning terminology; positioning considerations; procedures, anatomy, and topographical anatomy related to chest and abdomen cavities, bony thorax, upper extremities, shoulder girdle; and lower extremities.
Prerequisites: BIOL-227, BIOL-228, CAOT-179, COMM-101, ENGL-101, GEM 3, PSYC-101 or SOC-101
Corequisites: RADT-111, RADT-112L, RADT-113

RADT-112L Radiographic Procedures I Lab
0 Credits
Lab: 3 hours per week
Offering: Fall Only, Odd Years
This course is a corequisite for RADT-112.
Corequisites: RADT-112

RADT-113 Principles of Radiation Biology and Protection
3 Credits
Lecture: 2 hours per week
Offering: Fall Only, Odd Years
This course introduces students to the principles of cell radiation interaction. The radiation effects on cells and factors affecting cell response are presented. Acute and chronic effects of radiation exposure are discussed. Topics include radiation detection and measurement; patient protection; personnel protection; absorbed dose equivalencies; agencies and regulations; introduction to radiation biology; cell anatomy, radiation/cell interaction; and effects of radiation.
Prerequisites: BIOL-227, BIOL-228, CAOT-179, COMM-101, ENGL-101, GEM 3, PSYC-101 or SOC-101
Corequisites: RADT-111, RADT-112, RADT-113L

RADT-113L Principles of Radiation Biology and Protection Lab
0 Credits
Lab: 2 hours per week
Offering: Fall Only, Odd Years
This course is a corequisite for RADT-113.
Corequisites: RADT-113

RADT-114 Radiographic Procedures II
4 Credits
Lecture: 3 hours per week
Offering: Spring Only, Even Years
This course continues to develop the knowledge required to perform radiographic procedures in the laboratory and clinical setting. Topics include: anatomy and routine projections of the pelvic girdle; anatomy and routine projections of the spine, gastrointestinal (GI) procedures; genitourinary (GU) procedures; and biliary system procedures.
Prerequisites: RADT-111, RADT-112, RADT-113
Corequisites: RADT-114L, RADT-115, RADT-116

RADT-114L Radiographic Procedures II Lab
0 Credits
Lab: 3 hours per week
Offering: Spring Only, Even Years
This course is a corequisite for RADT-114.
Corequisites: RADT-114

RADT-115 Radiologic Physics and Equipment
3 Credits
Lecture: 2 hours per week
Offering: Spring Only, Even Years
This course introduces students to basic knowledge of atomic structure and terminology. Other topics include the nature and characteristics of x-radiation; ionizing and non-ionizing radiation; x-ray production; the properties of x-rays and the fundamentals of x-ray photon interaction with matter. In addition, students will gain knowledge in radiographic, fluoroscopic and mobile equipment requirements and design, Automatic Exposure Control (AEC) devices, beam restriction, filtration, quality control, and quality management principles of analog and digital systems. Laboratory experiences will demonstrate applications of theoretical principles and concepts.
Prerequisites: RADT-111, RADT-112, RADT-113
Corequisites: RADT-114, RADT-115L, RADT-116

RADT-115L Radiologic Physics and Equipment Lab
0 Credits
Lab: 2 hours per week
Offering: Spring Only, Even Years
This course is a corequisite for RADT-115.
Corequisites: RADT-115

RADT-116 Clinical Radiography I
6 Credits
Internship: 18 hours per week
Offering: Spring Only, Even Years
This course introduces students to the hospital clinical setting and provides an opportunity for students to participate in or observe radiographic procedures learned in RADT112/112L. Topics include: orientation to hospital areas and procedures; orientation to mobile/surgery; orientation to radiography and fluoroscopy; participation in and/or observation of procedures related to body cavities, the shoulder girdle, upper extremities, and lower extremities. Student activities are under direct supervision.
Prerequisites: RADT-111, RADT-112, RADT-113
Corequisites: RADT-114, RADT-115

RADT-118 Radiographic Procedures III
4 Credits
Lecture: 3 hours per week
Offering: Summer Only, Even Years
This course continues to introduce and develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the cranium; anatomy and routine projections of the facial bones; anatomy and routine projections of the sinuses; sectional anatomy of the head, neck, thorax and abdomen. This course includes a lecture, lab section, and an oral presentation.
Prerequisites: RADT-114, RADT-115, RADT-116
Corequisites: RADT-118L, RADT-119

RADT-118L Radiographic Procedures III Lab
0 Credits
Lab: 3 hours per week
Offering: Summer Only, Even Years
This course is a corequisite for RADT-118.
Corequisites: RADT-118

RADT-119 Clinical Radiography II
4 Credits
Internship: 12 hours per week
Offering: Summer Only, Even Years
This course continues introductory student learning experiences in the hospital setting. Topics include: equipment utilization; exposure techniques; attend to and/or observation of routine projections of the lower extremities, pelvic girdle, and spine; attend to and/or observation of procedures related to the gastrointestinal (GI), genitourinary (GU), and biliary systems; and attend to and/or observation of minor radiologic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision.
Prerequisites: RADT-114, RADT-115, RADT-116
Corequisites: RADT-118

RADT-211 Radiographic Imaging
4 Credits
Lecture: 3 hours per week
Offering: Fall Only, Even Years
This course introduces factors that govern and influence the production of the radiographic image using analog and digital radiographic equipment found in diagnostic radiology. Emphasis will be placed on knowledge and techniques required to produce high quality diagnostic radiographic images. Topics include: Image quality (radiographic density; radiographic contrast; recorded detail; distortion; grids; image receptors and holders (analog and digital); processing considerations (analog and digital); image acquisition (analog, digital, and PACS); image analysis; and image artifacts (analog and digital). Guidelines for selecting exposure factors and evaluating images within a digital system will assist students to bridge between film-based and digital imaging systems. Factors that impact image acquisition, display, archiving and retrieval are discussed. Laboratory experiences will demonstrate applications of theoretical principles and concepts.
Prerequisites: RADT-118, RADT-119
Corequisites: RADT-211L, RADT-220

RADT-211L Radiographic Imaging Lab
0 Credits
Lab: 2 hours per week
Offering: Fall Only, Even Years
This course is a corequisite for RADT-211.
Corequisites: RADT-211

RADT-220 Clinical Radiography III
8 Credits
Internship: 24 hours per week
Offering: Fall Only, Even Years
This course provides students with continued hospital setting work experience. Students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: patient care; behavioral and social competencies; performance and/or observation of minor special procedures; special equipment use; and participation in and/or observation of cranial and facial radiography. Execution of radiographic procedures will be conducted under direct and indirect supervision.
Prerequisites: RADT-118, RADT-119
Corequisites: RADT-211

RADT-221 Clinical Radiography IV
10 Credits
Internship: 30 hours per week
Offering: Spring Only, Odd Years
This course provides students with continued hospital setting work experience. Students demonstrate increased proficiency levels in skills introduced in all of the radiographic procedures courses and practiced in previous clinical radiography courses. Topics include: patient care; behavioral and social competency; advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; integration of procedures and/or observation of angiographic, interventional, minor special procedures; integration of procedures and/or observation of special equipment use; integration of procedures and/or observation of routine and special radiographic procedures; and final completion of all required clinical competencies. Execution of radiographic procedures will be conducted under direct and indirect supervision.
Prerequisites: RADT-211, RADT-220
Corequisites: RADT-222

RADT-222 Radiologic Technology Review
2 Credits
Directed Study: 2 hours per week
Offering: Spring Only, Odd Years
This course provides a review of basic knowledge from previous courses and helps the student prepare for national certification examinations for radiographers. Topics include: image production and evaluation; radiographic procedures; anatomy, physiology, pathology, and terminology; equipment operation and quality control; radiation protection; and patient care and education.
Prerequisites: RADT-211, RADT-220
Corequisites: RADT-221