

RADIOLOGIC SCIENCE (RADS)

RADS 1000 - Introduction to Radiography and Patient Care (3 Credits)

Provides the student with an overview of radiography and patient care. Students will be oriented to the radiographic profession as a whole. Emphasis will be placed on patient care with consideration of both physical and psychological conditions. Introduces a grouping of fundamental principles, practices, and issues common to many specializations in the health care profession. In addition to the essential skills, students explore various delivery systems and related issues. Topics include: ethics, medical and legal considerations, Right to Know Law, professionalism, basic principles of radiation protection and exposure, equipment introduction, health care delivery systems, hospital and departmental organization, medical emergencies, pharmacology/contrast agents, media, OR and mobile procedures patient preparation, death and dying, body mechanics/transportation, basic life support/CPR, and patient care in radiologic sciences. Offered: Spring.

Lecture hours: 2

Lab hours: 3

RADS 1020 - Radiographic Procedures I (2 Credits)

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 imaging procedures; positioning terminology; positioning consideration; procedures, anatomy, and topographical anatomy related to body cavities, bony thorax, and abdomen. Offered: Summer.

Prerequisites: ALHE 1120 and ENGL 1101 and (BIOL 1100K or BIOL 2412K) and RADS 1000

Corequisites: RADS 1220

Lecture hours: 1

Lab hours: 2

RADS 1040 - Radiographic Procedures II (3 Credits)

Continues to develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the upper extremities and shoulder girdle; lower extremities; pelvic girdle; anatomy and routine projections of the spine, ribs and sternum. Offered: Fall.

Prerequisites: (RADS 1020 and RADS 1220)

Corequisites: RADS 1230

Lecture hours: 2

Lab hours: 3

RADS 1100 - Principles of Radiation Biology and Protection (3 Credits)

Provides instruction on the principles of cell radiation interaction. Radiation effects on cells and factors affecting cell response are presented. Acute and chronic effects of radiation 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. Offered: Summer.

Prerequisites: RADS 1000

Lecture hours: 3

RADS 1120 - Imaging Science I (4 Credits)

Content is designed to establish a basic knowledge of atomic structure and terminology. Also presented are the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. Factors that govern the image production process, film imaging with related accessories, and a basis for analyzing radiographic images. Included is the importance of minimum imaging standards, discussion of a problem-solving technique for image evaluation and the factors that can affect image quality. Actual images will be included for analysis. Offered: Fall.

Prerequisites: (MATH 1111) and (RADS 1000)

Lecture hours: 3

Lab hours: 2

RADS 1210 - Clinical Imaging I (2 Credits)

Introduces students to the hospital clinical setting and provides an opportunity for students to participate in and/or observe radiographic procedures. 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 the thoracic and abdominal body cavities. Activities of students are under direct supervision. Offered: Spring.

Corequisites: RADS 1000

Lab hours: 8

RADS 1220 - Clinical Imaging II (2 Credits)

Continues introductory student learning experiences in the hospital setting. Topics include: patient care, radiation safety practices, equipment utilization, exposure techniques, attend to and/or observation of routine projections of the thoracic and abdominal cavities in general and fluoroscopic procedures, observation of routine projections of the upper extremities and the shoulder girdle and lower extremities, pelvic girdle, and spine, observation of procedures related to the gastrointestinal (GI), genitourinary (GU), and biliary systems and observation of procedure related to minor radiologic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision. Initial competencies will be obtained. Offered: Summer.

Prerequisites: (RADS 1210 and RADS 1000)

Corequisites: RADS 1020

Lab hours: 8

RADS 1230 - Clinical Imaging III (4 Credits)

Intermediate student learning experiences in the hospital/clinical setting. Topics include: patient care; radiation safety practices, equipment utilization, exposure techniques, attend to and/or observation of routine projections of the thoracic and abdominal cavities, upper and 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 procedure related to minor radiologic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision. Additional competencies and evidence of continued competencies will be obtained. Offered: Fall.

Prerequisites: RADS 1220

Corequisites: RADS 1040

Lab hours: 16

RADS 2060 - Radiographic Procedures III (3 Credits)

Continues to develop the knowledge required to perform radiographic procedures. Topics include: gastrointestinal (GI) procedures, genitourinary (GU) procedures, biliary system procedures and special procedures, anatomy and routine projections of the cranium, facial bones, and sinuses, sectional anatomy of the head, neck, thorax and abdomen. Offered: Spring.

Prerequisites: (RADS 1040 and RADS 1230)

Corequisites: RADS 2240

Lecture hours: 2

Lab hours: 2

RADS 2130 - Imaging Science II (4 Credits)

Content is designed to impart an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Guidelines for selecting exposure factors and evaluating images within a digital system assist students to bridge between film-based and digital imaging systems, with a knowledge base in radiographic, fluoroscopic, mobile and tomographic equipment requirements and design. This content also provides a basic knowledge of quality control, principles of digital system, quality assurance and maintenance. Content is designed to provide entry-level radiography students with principles related to computed tomography (CT) imaging and other imaging modalities (i.e., MRI, US, NM, Mammography) in terms of purpose, principles, equipment/material and procedure. Topics include: imaging equipment, digital image acquisition and display, and basic principles of CT and other imaging modalities. Topics include: imaging equipment, digital image acquisition and display, basic principles of CT and other imaging modalities. Offered: Fall.

Prerequisites: (CISM 2201) and (RADS 1120)

Lecture hours: 4

RADS 2140 - Pathology for the Imaging Professional (2 Credits)

Content is designed to introduce the student to concepts related to disease and etiological considerations. Pathology and disease as they relate to various radiographic procedures are discussed with emphasis on radiographic appearance of disease and impact on exposure factor selection. Topics include: fundamentals of pathology, trauma/physical injury and systematic classification of disease. Offered: Summer.

Prerequisites: (RADS 1000) and (ALHE 1120) and (BIOL 1100K or BIOL 2412K)

Lecture hours: 2

RADS 2150 - Radiologic Science Review (3 Credits)

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. Offered: Fall.

Prerequisites: RADS 1100 and RADS 2130 and RADS 2140 and RADS 2250 and RADS 2060

Lecture hours: 3

RADS 2240 - Clinical Imaging IV (6 Credits)

Continues to provide students with intermediate learning experience in hospital/clinical setting. Students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: patient care, radiation safety practices, 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. Competencies and evidence of continued competencies will continue to be obtained. Offered: Spring.

Prerequisites: RADS 1230

Corequisites: RADS 2060

Lab hours: 24

RADS 2250 - Clinical Imaging V (3 Credits)

Advanced clinical learning experiences are obtained as students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: sterile techniques, participation in and/or observation of minor special procedures, special equipment use and genitourinary system procedures, participation in and/or observation of cranial and facial radiography and competency completion evaluation. Execution of radiographic procedures will be conducted under direct and indirect supervision. Competencies and evidence of continued competencies will continue to be obtained. Offered: Summer.

Prerequisites: RADS 2240

Lab hours: 12

RADS 2260 - Clinical Imaging VI (6 Credits)

Provides students with continued hospital setting experience. Students demonstrate increased proficiency levels in skills introduced in all of the imaging procedures courses and practiced in previous clinical imaging 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 imaging procedures will be conducted under direct and indirect supervision. Offered: Fall.

Prerequisites: RADS 2250

Corequisites: RADS 2150

Lab hours: 24