Radiologic Technology (RAD) - Courses

Courses

RAD 306 Cr.3-5
Imaging Procedures I
This course is a study of human anatomy and physiology geared toward students majoring in the radiologic sciences. The course explores the structure and function of the human body, its components, the integration of systems into one functional unit and the concept of homeostasis. This course covers the theoretical and practical principles of radiographic positioning and procedures of the chest, abdomen and upper extremity. Special attention is paid to assessing radiographs for diagnostic quality and to instill critical thinking skills. Laboratory practice sessions are included. Prerequisite: admission to Radiologic Technology Program. Offered Fall.

RAD 307 Cr.2-5
Seminar in Radiology I - Ethics, Law, and Medical Records
This course provides the student with an introduction to radiography practice. Topics include the ARRT code of ethics, HIPAA laws, ethical and legal issues, and licensure and professional organizations. Emphasis is placed on the student's role in medical imaging. This seminar course will include writing and class presentations about ethical and legal issues in the medical field. Prerequisite: admission to Radiologic Technology Program. Offered Spring.

RAD 308 Cr.2-5
Imaging Procedures II
This course is a study of human anatomy and physiology geared toward students majoring in the radiologic sciences. The course explores the structure and function of the human body, its components, the integration of systems into one functional unit, the concept of homeostasis and the basic mechanism of disease processes. This course also covers the theoretical and practical principles of radiographic procedures of the shoulder, lower extremity, pelvis, and vertebral column. Special attention is paid to patient positioning, assessing radiographs for diagnostic quality, and the development critical thinking skills. Laboratory practice sessions are included. Prerequisite: admission to Radiologic Technology Program. Offered Spring, Summer.

RAD 309 Cr.2-5
Imaging Procedures III
This course is a study of human anatomy and physiology geared toward students majoring in the radiologic sciences. The course explores the structure and function of the human body, its components, the integration of systems into one functional unit, the concept of homeostasis and the basic mechanism of disease processes. This course covers the theoretical and practical principles of patient positioning and procedures in radiography of the bony thorax, skull, paranasal sinuses, and facial bones. Special attention is paid to assessing radiographs for diagnostic quality for the development of critical thinking skills. Laboratory practice sessions are included to aid in the application of procedural methods. Lect. 1, Lab 2. Prerequisite: admission to Radiologic Technology Program. Offered Summer.

RAD 350 Cr.2-4
Introduction to Radiologic Sciences and Health Care
This course provides the student with an introduction to radiography practice. Topics include patient care, patient care equipment, patient assessment, aseptic & non-aseptic techniques, pharmacology. Emphasis is placed on the student's role in medical imaging. Laboratory simulation and skills testing is provided to enhance patient care skills. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 351 Cr.1-5
Radiation Protection
This course studies the principles of radiation protection as they apply to exposure from ionizing radiation during medical procedures. It includes radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies, and healthcare organizations. It focuses on the responsibilities of the radiographer in assuring correct radiation protection practices are followed for patients, personnel, and the public. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 353 Cr.2-5
Principles of Imaging I
This course introduces the technical aspects of radiographic image production. Topics covered include production of the x-ray beam, image formation, image quality, scatter control exposure factor selection, automatic exposure control, and technique charts. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 355 Cr.2-5
Radiography Clinical Education I
Students will participate in radiographic procedures at various clinical education centers and work toward achieving competency in radiographic practice. The first seven weeks is spent in providing the student with orientation to the clinical environment. Students will begin by observing in the clinical areas with participation increasing as the comfort level and procedural skill levels develop. Performance objectives and cognitive goals apply during the remaining weeks of the semester focusing on basic skill levels in radiography. A minimum of five successful competency tests must be completed by the end of this course. Prerequisite: admission to Radiologic Technology Program. Offered Fall.

RAD 360 Cr.1-5
Radiation Biology
This course teaches the principles of radiation biology. Topics covered include the various ways ionizing radiation interacts with matter from the atomic to the systemic levels of biologic organization including biologic effects of radiation exposure, early effects, late effects, somatic effects, and genetic effects. The concepts of stochastic and deterministic effects, risk models, and dose-response curves are also covered. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 362 Cr.2-5
Principles of Imaging II
This course covers the technical aspects of radiographic image production. Topics covered include image acquisition, image receptors, processing, sensitometry, digital imaging, and fluoroscopy. Prerequisite: admission to Radiologic Technology Program. Offered Spring.

RAD 364 Cr.1-5
Radiography Clinical Education II
Students will participate in radiographic procedures at various clinical education centers and work toward achieving competency in radiographic practice. Students will rotate through various clinical areas with participation increasing as the comfort level and procedural skill levels develop. Performance objectives and cognitive goals apply during the remaining weeks of the semester focusing on basic skill levels in radiography. A minimum of 15 successful competency tests must be completed by the end of this course. Prerequisite: admission to Radiologic Technology Program. Offered Spring.

RAD 372 Cr.1-5
Radiography Clinical Education III
Students will participate in radiographic procedures at various clinical education centers and work toward achieving competency in radiographic practice. Students will rotate through various clinical areas with participation increasing as the comfort level and procedural skill levels develop. Performance objectives and cognitive goals apply during the remaining weeks of the semester focusing on basic skill levels in radiography. A minimum of 25 successful competency tests must be completed by the end of this course. Of the 25 successful competency tests, 10 must be completed with a clinical instructor. Prerequisite: admission to Radiologic Technology Program. Offered Summer.

RAD 401 Cr.2-5
Seminar in Radiography II - Research in the Radiologic Sciences
Topics will be geared toward research in the radiologic sciences. Students will gain experience working in groups and independently. Students will have the opportunity to read and critique professional journal articles and prepare an independent study project. The project can be completed as a scientific paper, scientific exhibit, or video exhibit. Topics must be pertinent to medical imaging and students must follow the essay and exhibit guidelines as published by the Wisconsin Association of Educators in Radiologic Technology (WAERT). Qualified projects will be submitted to the WAERT Student Symposium Essay and Exhibit Competition. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 470 Cr.2-4
Radiologic Physics I
This course studies the principles of physics as they apply to radiologic science. It encompasses comprehensive coverage of the design and function of the x-ray imaging system components, x-ray production, the x-ray emission spectrum, and x-ray interactions with matter. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 473 Cr.2-5
Imaging Procedures IV
This course covers advanced imaging procedures of the skeletal, CNS, and circulatory systems. The course includes guidelines for trauma and surgical radiography, pediatrics, bone densitometry, and the use of contrast agents in advanced radiologic procedures. It also covers advanced modalities including mammography, radiation therapy, nuclear medicine, and ultrasound. Prerequisite: admission to Radiologic Technology Program. Offered Fall.

RAD 474 Cr.2-5
Radiography Clinical Education IV
Students will participate in radiographic procedures at various clinical education centers and demonstrate competency in radiographic practice. Performance objectives and cognitive goals reinforce basic skills and focus on the achievement of advanced skills required of the practicing radiographer. Seventy mandatory competencies are required prior to program completion. A minimum of 40 successful competency tests must be completed by the end of this course. In addition, two of these successful competency tests must be completed with a clinical instructor, and two must be completed as impromptu competency tests to demonstrate continued proficiency. Prerequisite: admission to Radiologic Technology Program. Offered Fall.

RAD 475 Cr.2-5
Seminar in Radiography III - Physics II
This course studies the principles and equipment associated with advanced x-ray imaging and quality control. Topics cover mammography, fluoroscopy, interventional radiography, quality assurance programs, quality control testing, computed tomography, and magnetic resonance imaging. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 477 Cr.1-5
Cross-Sectional Anatomy
This course is a study of human anatomy from a cross-sectional perspective. Special consideration is given to its application in the imaging modalities of CT and MRI. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 478 Cr.2-4
Radiographic Pathology
This course is a study of disease processes and their radiographic appearance. Emphasis is on the detection of disorders and injuries relative to each body system and the diagnosis of pathological processes as aided by medical imaging. Prerequisite: admission to Radiologic Technology Program. Offered Fall, Spring.

RAD 479 Cr.2-5
Radiography Clinical Education V
Students will participate in radiographic procedures at various clinical education centers and demonstrate competency in radiographic practice. Performance objectives and cognitive goals reinforce basic skills and focus on the achievement of advanced skills required of the practicing radiographer. Seventy mandatory competencies are required prior to program completion. A minimum of 55 successful competency tests must be completed by the end of this course. In addition, two of these successful competency tests must be completed with a clinical instructor, and two must be completed as impromptu competency tests to demonstrate continued proficiency. Prerequisite: admission to Radiologic Technology Program. Offered Spring, Summer.

RAD 480 Cr.1-5
Seminar in Radiography IV - Image Analysis
This course covers the principles and practices associated with quality analysis and critique of the radiographic image. Emphasis is on the practical and empirical application of image analysis methods and techniques. Prerequisite: admission to Radiologic Technology Program. Offered Spring, Summer.

RAD 485 Cr.1-5
Professional Development in Radiography
This course is a comprehensive review of subjects deemed critical for the ARRT certification examination in radiography. Topics are in accordance with the content specifications of the ARRT certification examination for radiography. Activities include simulated certification examinations, discussions, and professional development seminars. Prerequisite: admission to Radiologic Technology Program. Offered Spring, Summer.

RAD 486 Cr.2-5
Radiography Clinical Education VI
Students will participate in radiographic procedures at various clinical education centers and demonstrate competency in radiographic practice. Performance objectives and cognitive goals reinforce basic skills and focus on the achievement of advanced skills required of the practicing radiographer. A minimum of 70 successful competency tests must be completed by the end of this course. In addition, one of these successful competency tests must be completed with a clinical instructor, and one must be completed as impromptu competency tests to demonstrate continued proficiency. Seventy mandatory competencies are required prior to program completion. Prerequisite: admission to Radiologic Technology Program. Offered Spring, Summer.