

RADIOGRAPHY (RAD)

RAD 1210 – Principles of Imaging I

3 Credit hours

Covers the structure of matter, electricity, and basic physical sciences leading to the principles of x-ray production. Students will also study x-ray emission spectrums, prime factors of exposure, and radiation interactions with matter. Laboratory activities will allow students to apply radiographic principles in producing images in preparation for use in clinical situations. "C" grade policy applies.

Prerequisites: MTH 1370 Good standing in Radiographic Imaging Program.

RAD 1220 – Principles of Imaging II

3 Credit hours

Covers the process of radiographic image formation and the basic factors controlling quality of the radiographic image. Students will also explore imaging informatics and PACS. "C" grade policy applies.

Prerequisites: RAD 1210

Corequisites: Any Radiographic Imaging clinical course.

RAD 1310 – Radiographic Procedures I

3 Credit hours

Provides instruction in radiographic positioning and image critique for procedures of the chest, abdomen, hand, wrist, fingers, forearm, elbow, foot, calcaneus, ankle, toes, lower leg, knee, intercondylar fossa, patella, humerus, shoulder, AC joints, clavicle, scapula, and foreign body localization. Students study basics common to all radiographic procedures and arthrology/osteology. "C" grade policy applies.

Prerequisites: BIO 1110.

RAD 1320 – Radiographic Procedures II

3 Credit hours

Provides instruction in radiographic positioning and image critique for procedures of the pelvis, hip, femur, orthoroentgenography, cervical spine, thoracic spine, lumbar spine, sacrum, coccyx, SI joints, ribs, sternum, and contrast exams of the alimentary, hepatobiliary, and urinary tracts. "C" grade policy applies.

Prerequisites: RAD 1310

Corequisites: Any Radiographic Imaging clinical course.

RAD 1410 – Introduction to Radiography

2 Credit hours

Prepares students for the requirements and expectations of the introductory clinical experience, including instruction in radiation protection, patient care procedures, and professional concepts for radiographers. "C" grade policy applies.

Prerequisites: Good standing in Radiographic Imaging Program.

RAD 1510 – Clinical Education I - Radiography

3 Credit hours

Provides a supervised learning experience in a clinical setting with emphasis on procedures of the appendicular and axial skeleton, chest, and abdomen. Students begin practical experience with principles of exposure, image critique, and other associated professional skills in actual clinical practice. Practical competencies are utilized to determine if students can safely and accurately perform radiographic procedures. "C" grade policy applies.

Prerequisites: RAD 1310, RAD 1410

Corequisites: RAD 1320.

RAD 1520 – Clinical Education II - Radiography

4 Credit hours

Provides a supervised learning experience in a clinical setting with emphasis on procedures of the appendicular and axial skeleton. Application of principles of exposure, with emphasis on image critique, and other associated professional skills continues in this course. "C" grade policy applies.

Prerequisite: RAD 1510 or RAD 2590.

RAD 2210 – Principles of Imaging III

3 Credit hours

Covers advanced radiographic principles including quality assurance and quality control, fluoroscopy, mobile radiography, exposure systems, and the analysis of complex exposure problems. This course also explores some of the specialized imaging modalities including computed tomography (CT), magnetic resonance imaging (MRI), ultrasonography, and DEXA. Laboratory exercises support key concepts of the subject matter. "C" grade policy applies.

Prerequisites: RAD 1220

Corequisites: Any Radiographic Imaging Clinical course.

RAD 2220 – Radiation Biology

3 Credit hours

Covers radiation interactions, radiosensitivity, radiation dose/response relationships, deterministic and stochastic radiation effects, radiation protection, and health physics in a lecture and laboratory format. Course discussions will also include the impact of macro- and micro-culture on radiation protection policies and practices. This course also explores nuclear medicine, PET, SPECT, radiation oncology, and emerging modalities. "C" grade policy applies.

Prerequisites: BIO 1120, RAD 1210, RAD 2210

Corequisites: Any Radiographic Imaging clinical course.

RAD 2310 – Radiographic Procedures III

3 Credit hours

Provides instruction in radiographic positioning and image critique for procedures of the skull, facial bones, zygomatic arches, mandible, TMJs, sinuses, orbits, and nasal bones. The course also includes instruction in radiography of trauma, pediatric, geriatric, and surgical patients. Furthermore, the course provides students with a basic understanding of mammography, arthrography, urography, and interventional radiography including specialized equipment used in these exams. Students are also introduced to sectional anatomy in cadaver sections and image correlation.

Prerequisites: BIO 1120, RAD 1320

Corequisites: Any Radiographic Imaging clinical course.

RAD 2320 – Radiographic Patient Analysis

2 Credit hours

Presents common radiographically demonstrated pathologies and anomalies in reference to structural and functional changes in the human body. The course also provides an increased knowledge of basic pharmacology, medical emergencies, and principles of patient care. "C" grade policy applies.

Prerequisites: Any two Radiographic Imaging clinical courses, BIO 1120

Corequisites: Any Radiographic Imaging clinical course.

RAD 2490 – Selected Topics in Radiography ✎ 🎓**1 Credit hour**

Prepares students to demonstrate their proficiency by integrating technical knowledge with core skills and abilities taught in the Radiographic Imaging program. Students will actively prepare for the national radiography certification exam through instructor facilitated review sessions and online review modules to identify individual strengths and weaknesses. This capstone course will include an e-portfolio assignment, a capstone project including a video and oral presentation, and participation in the Health Sciences cultural competency retreat. 'C' grade policy applies.

Prerequisites: BHS 1390, BIO 1110, BIO 1120, PSY 1010, RAD 2210, RAD 2310, RAD 2510, Good standing in Radiographic Imaging Program, or permission by department coordinator and chair.

RAD 2510 – Clinical Education III - Radiography**3 Credit hours**

Provides a supervised learning experience in a clinical setting with emphasis on procedures of the skull including paranasal sinuses and facial bones, contrast exams, and fluoroscopic procedures. Students continue growth of associated professional skills and application of knowledge from previous and current courses. Practical competencies are utilized to determine if students can safely and accurately perform radiographic procedures. "C" grade policy applies.

Prerequisites: RAD 1520 or RAD 2590.

RAD 2520 – Clinical Education IV - Radiography**3 Credit hours**

Provides a supervised learning experience in a clinical setting with emphasis on advanced exams including surgical, trauma, and computed tomography procedures. Students continue growth of associated professional skills and application of knowledge from previous and current courses. Practical competencies are utilized to determine if students can safely and accurately perform radiographic procedures. "C" grade policy applies.

Prerequisites: RAD 2510 or RAD 2590.

RAD 2590 – Clinical Education Seminar - Radiography**1-4 Credit hours**

Provides a supervised learning experience in a clinical setting with emphasis on radiographic and fluoroscopic exams appropriate to the student's knowledge. Students continue growth of associated professional skills and application of knowledge from previous and current courses. Practical competencies are utilized to determine if students can safely and accurately perform radiographic procedures. "C" grade policy applies.

Prerequisites: Good standing in Radiographic Imaging Program
Permission of Program Coordinator/Chair.

RAD 2621 – Principles of Computed Tomography**2 Credit hours**

Covers the basic principles of computed tomography inclusive of historical evolution of CT, x-ray tube structure, detector design, scan geometry, digital imaging reconstruction, and radiation dose to the patient.

Prerequisites: Current RT(R) certification by the ARRT must be on file with program coordinator.

RAD 2622 – Computed Tomography Procedures**1 Credit hour**

Presents computed tomography procedures common in most medical imaging departments, inclusive of sectional anatomy and associated patient care.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.

RAD 2631 – Clinical Education I - CT**1 Credit hour**

Provides a supervised learning experience in a clinical setting with emphasis on computed tomography procedures common in medical imaging practice.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.

RAD 2632 – Clinical Education II - CT**1 Credit hour**

Provides a continuation of a supervised learning experience in a clinical setting with emphasis on computed tomography procedures common in medical imaging practice.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.

RAD 2721 – Principles of Mammography**1 Credit hour**

Covers the basic principles of mammography inclusive of historical evolution of mammography, mammography equipment, quality assurance and control including MQSA, and radiation dose to the patient.

Prerequisites: Current RT(R) certification by the ARRT must be on file with program coordinator.

RAD 2722 – Mammographic Procedures**1 Credit hour**

Presents mammography procedures common in most medical imaging departments inclusive of breast anatomy, common pathologies, and associated patient care.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.

RAD 2731 – Clinical Education I - Mammography**1 Credit hour**

Provides a supervised learning experience in a clinical setting with emphasis on mammography procedures common in medical imaging practice.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.

RAD 2732 – Clinical Education II - Mammography**1 Credit hour**

Provides a continuation of a supervised learning experience in a clinical setting with emphasis on mammography procedures common in medical imaging practice.

Prerequisites: Current RT(R) certification by the ARRT must be on file with the program coordinator.