

Course Descriptions

RAD 310 Patient Care and Management I

The course encompasses subjects pertinent to the care and examination of the patient and work within the profession. Study is made of patient assessment and communication, safety, infection control, vital signs, pediatric imaging, and geriatric imaging.

RAD 320 Radiation Protection

This course investigates detection and measurement of radiation, sources of radiation exposure, occupational and general public dose equivalent limits, methods for minimizing exposure to patient, self, and others, and application of federal and state regulations.

RAD 330 Radiographic Exposure

This course introduces students to the factors that control the radiation exposure to the image receptor. The primary exposure factors, differential absorption, patient and equipment factors that affect exposure, spatial resolution, distortion, and magnification are covered. Students will work to formulate a technique chart. Emphasis is placed on practical applications of basic laws and theories in problem-solving situations and formulation of techniques in the production of quality images.

SCI 320 Anatomy and Physiology I

Study is made of human anatomy and its function. Areas include general cell and tissue structure, the respiratory system, general bone structure, the lower extremities, the upper extremities, and the genitourinary system. Detailed topographic anatomy, positioning landmarks, and radiographic appearance are covered.

RAD 350 Radiographic Procedures I (with Lab)

Study of the common and supplementary positions and procedures for the respiratory system, abdominal cavity, lower extremities from the knee to the toe, and upper extremities from the elbow to the finger. Anatomical landmarks, anatomy, body habitus, and special patient considerations are emphasized. Laboratory demonstration is used for patient correlation.

RAD 380 Clinical Education I

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

RAD 315 Patient Care and Management II

The course encompasses subjects pertinent to the care and examination of the patient and work within the profession. Study is made of medical emergencies, trauma, urologic and gastrointestinal procedures, aseptic technique, ECG, and an introduction to pharmacology and drug administration.

RAD 325 Radiation Biology

This course relates the physical and biologic effects of radiation to human life and the environment. Interactions of x-rays and matter are studied in depth. Effects on a molecular, cellular, and whole body level are correlated to short and long term effects. Survival statistics and risk estimates are also studied.

RAD 335 Radiographic Equipment

Study is made of the basic structure of matter, electricity, magnetism, and their interrelationships. That knowledge is applied to the construction and function of x-ray generators, circuitry components, the x-ray tube, and fluoroscopic image intensifier. X-ray production and emission are discussed in detail.

SCI 330 Anatomy and Physiology II

Study is made of human anatomy and its function. Areas include the gastrointestinal system and accessory organs, spine and thorax, skull, heart, and cardiovascular system. Detailed topographic anatomy, positioning landmarks, and radiographic appearance are covered.

SCI 340 Pathology I

Discussion is made of medical/surgical diseases with diagnostic evaluation and treatment. The impact of disease and pathology is explored in patient evaluation, image quality, and performance of various radiographic procedures. Areas include the imaging modalities, general pathological processes, the respiratory system, and the portions of the skeletal system.

RAD 360 Radiographic Procedures II (with Lab)

Study of the common and supplementary positions and procedures for the upper and lower GI system, urinary system, pelvic girdle and femur, and shoulder girdle and humerus. Anatomical landmarks, anatomy, body habitus, and special patient considerations are emphasized. Laboratory demonstration is used for patient correlation.

RAD 385 Clinical Education II

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

RAD 375 Special Procedures I

This course involves lectures and practice in specialized procedures and interventional exams. Study is made of positioning, supplies, precautions, and patient care during these procedures. Topics include myelograms, hysterothoracograms, arthrograms, and general tomography.

RAD 360 Imaging Modalities

The student is introduced to the equipment and general operation of the imaging and therapeutic modalities. Topics include tomography, DEXA, MRI, CVIT, mammography, sonography, nuclear medicine, radiation therapy, and dosimetry.

RAD 340 Digital Imaging

Study is made of the role of digital systems in the modern imaging environment. Correlation of basic exposure principles as applied to the creation, pre-processing, post-processing, display, and storage of images in a digital environment. Special consideration is given to the differences in CR and DR as well as the quality factors of the display system.

SCI 350 Pathology II

Discussion is made of medical/surgical diseases with diagnostic evaluation and treatment. The impact of disease and pathology is explored in patient evaluation, image quality, and performance of various radiographic procedures. Areas include portions of the skeletal system and the digestive system.

RAD 370 Radiographic Procedures III (with Lab)

Study of the common and supplementary positions and procedures for the spinal column, bony thorax, and skull. Anatomical landmarks, anatomy, body habitus, and special patient considerations are emphasized. Laboratory demonstration is used for patient correlation.

RAD 390 Clinical Education III

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

SCI 440 Pathology III

Discussion is made of medical/surgical diseases with diagnostic evaluation and treatment. The impact of disease and pathology is explored in patient evaluation, image quality, and performance of various radiographic procedures. Areas include the urinary system, nervous system, cardiovascular system, endocrine system, and hematopoietic tissues.

SCI 430 Cross-Sectional Anatomy

Study is made of human anatomy through multiple planes and the relationship of physical relationships between organs. Review of images from a variety of modalities are used with practical identification of structures. Topics include the head, neck, spine, thorax, abdominopelvic cavity, extremities, and joints.

SCI 410 Independent Research

Students prepare a research paper and scientific exhibit from a topic within the radiation sciences. The course provides practical skills needed to conduct library and information research, including defining research topics, searching and retrieving electronic and print sources, and evaluating, citing, and using information.

RAD 440 Special Procedures II

This course involves lectures and practice in specialized procedures and interventional exams. Study is made of positioning, supplies, precautions, and patient care during these procedures. Topics include ERCP, sialograms, lymphangiograms, venograms, surgical radiography, and trauma radiography.

RAD 450 Radiographic Procedures IV (with Lab)

This course also reviews previous procedures for the thoracic cavity, respiratory system, and lower extremities. Presentation and practice with uncommon positions and procedures are included. The student also progresses to image evaluation criteria and image analysis.

RAD 480 Clinical Education IV

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

HUM 400 Ethics and Law

This course provides a foundation for understanding the medical-legal issues relating to radiography, ethical theories, legal definitions, malpractice litigation, patient rights, advanced legal doctrines, healthcare reform, forensic radiography, and ethical issues related to research, technology, healthcare access, and diversity. The profession's Code of Ethics and Scope of Practice are reviewed with case studies to assist the student in applying the principles of law to real world situations.

MIT 450 CT Physics and Equipment

This course introduces students to the equipment and procedures associated with computed tomography. Study is made of instrumentation and physical principles, data acquisition and image processing, image reconstruction, artifacts, patient assessment, patient safety, radiation safety, contrast media, and imaging protocols

RAD 485 Clinical Education V

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

RAD 410 Quality Assurance

This course provides the student with the tools and information to perform quality control tests and work towards continuous quality improvement in medical imaging. Repeat analysis and image critique are included.

SCI 400 Pharmacology

Study is made of principles of nomenclature, pharmacodynamics, pharmacokinetics, routes of drug administration, safety precautions and medical intervention, medications pertinent to the imaging fields, and contrast agents used in medical imaging.

RAD 460 Radiographic Procedures V (with Lab)

This course also reviews previous procedures for the upper extremity, cervical spine, and thoracic spine. Presentation and practice with uncommon positions and procedures are included. The student also progresses to image evaluation criteria and image analysis.

RAD 485 Clinical Education V

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.

RAD 475 Radiographic Seminar

Assisting the transition out of an academic environment, this course incorporates academic reviews, certification preparation, and professional preparation with a focus on critical thinking and problem solving skills in a professional environment. Correlation is made between larger health care concerns and factors impacting the profession.

RAD 470 Radiographic Procedures VI (with Lab)

This course also reviews previous procedures for the lumbosacral spine and skull. Presentation and practice with uncommon positions and procedures are included. The student also progresses to image evaluation criteria and image analysis.

RAD 490 Clinical Education IV

A continuous process beginning with supervised correlation of theory and actual performance of examinations to unassisted performance and decision-making in a variety of situations. Clinical rotation guidelines assist the student as they progress from one area to another. Regular evaluations are an integral part of this process.