

Associate of Science in Radiography
Course Descriptions 2011

**Introduction to Radiology
RAD112**

**Pre-req.-admission to the program
2 credit hours**

This course introduces students to the role of radiography in health care. Topics include radiologic profession and organizations, radiologic terminology, ethics and laws in radiology, isolation techniques, safe equipment usage, radiology processes, procedures and documentation, radiation protection in the clinical areas, pharmacology, drug administration, assessment of vital signs, and venipuncture. Students apply legal and ethical considerations to patient care and pharmacology in the radiologic sciences.

**Radiographic Anatomy and Positioning I
RAD114**

**Pre-req.-admission to the program
2 credit hours**

Radiographic terminology, positioning and procedures will be introduced and practiced in a laboratory setting. Image evaluation to include: anatomy, positioning and radiation protection. Prepares radiography students to perform routine radiologic procedures on various parts of the body including the upper and lower extremities, shoulder and clavicle, and chest. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result.

**Clinical Practicum I
RAD114c**

**Pre-req.-admission to the program
1 credit hour**

This beginning level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. Introduces students to the hospital clinical setting and provides an opportunity to participate in 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 chest, upper and lower extremities and the shoulder girdle and clavicle. Activities of students are under direct supervision until competency is achieved; indirect supervision once competency is attained.

**Radiographic Anatomy and Positioning II
RAD124**

**Pre-req – RAD114
3 credit hours**

This course is a continuation of radiographic terminology, positioning and procedures with the presentation of more complex theories to further the knowledge of the student. New radiologic procedures will be introduced and practiced in a laboratory setting. Image evaluation to include, anatomy, positioning and radiation protection will be included. Prepares radiography students to perform routine radiologic procedures on various parts of the body including the knee, femur, hip and pelvis, abdomen, upper gastrointestinal system, and humerus, shoulder girdle and biliary system. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result.

**Clinical Practicum II
RAD124c**

**Pre-req – RAD114c
2 credit hours**

This second level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students will show continued competence on prior clinical requirements, as well as learn new procedures. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting.

**Radiographic Equipment and Computers
RAD128**

**Pre-req – MAT105, Gen Chem.
3 credit hours**

The course is designed to establish a knowledge base in radiographic, fluoroscopic, mobile and tomographic equipment requirements and design. Discussions will include the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. The content will also provide a basic knowledge of quality control in radiography. Topics covered will be the x-ray machine circuitry and tube which includes electronic theory and design, analysis of common malfunctions and repairs, digital and computed radiography, and fluoroscopy. In addition, a concentration of establishing appropriate technical factors based on anatomy, patient exposure and the relationship between digital index numbers will be thoroughly discussed.

**Radiographic Anatomy and Positioning III
RAD134**

**Pre-req – RAD124
3 credit hours**

This course is a continuation of radiographic terminology, positioning and procedures with the presentation of more complex theories to further the knowledge of the student. New radiologic procedures will be introduced and practiced in a laboratory setting. Image evaluation to include, anatomy, positioning and radiation protection will be included. Prepares radiography students to perform routine radiologic procedures on various parts of the body including the lower gastrointestinal and small bowel studies, urological studies, boney thorax, cervical, thoracic and lumbar spine. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result.

**Clinical Practicum III
RAD134c**

**Pre-req – RAD124c
2 credit hours**

This third level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students will show continued competence on prior clinical requirements, as well as learn new procedures. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the demonstration of communication and critical thinking skills appropriate to the clinical setting.

**Radiographic Imaging and Analysis
RAD138**

**Pre-req – RAD128
3 credit hours**

This course introduces radiography students to the process of creating radiographic images. Students determine the factors that affect image quality including contrast, density, and distortion. Students apply OSHA standards for health and safety in the darkroom. Students analyze exposure factor considerations; differentiate between film and exposure latitude, and uses of beam restricting devices.

**Radiographic Anatomy and Positioning IV
RAD244**

**Pre-req – RAD134
2 credit hours**

This course is a continuation of radiographic terminology, positioning and procedures with the presentation of more complex theories to further the knowledge of the student. New radiologic procedures will be introduced and practiced in a laboratory setting. Image evaluation to include: anatomy, positioning and radiation protection. Prepares radiography students to perform routine radiologic procedures on various parts of the body including the skull, facial bones, mandible, sinuses, mobile, surgery, and special positioning in pediatric procedures, and trauma. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result.

**Clinical Practicum IV
RAD244c**

**Pre-req – RAD134c
3 credit hours**

This fourth level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students will show continued competence on prior clinical requirements, as well as learn new procedures. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

**Radiographic Pathology
RAD246**

**Pre-req – RAD134
2 credit hours**

This course prepares students to determine the basic radiographic manifestations of pathological conditions. Students classify trauma related to site, complications, and prognosis and locate the radiographic appearance of pathologies. The lecture portion of this course will also include basic cross sectional anatomy of the brain, thorax, abdomen, pelvis, spine, and extremities.

**Radiation Safety
RAD248**

**Pre-req – RAD138
1 credit hour**

This course provides information which will enable the student to safely administer ionizing radiation in the diagnostic clinical setting. This course examines how radiation affects human cellular biology; federal regulations regarding exposure levels to patients and operators; and the proper utilization of protective devices to minimize exposure. Computed Tomography equipment and its application will be investigated.

**Radiographic Anatomy and Positioning V
RAD254**

**Pre-req – RAD244
2 credit hours**

This course is a continuation of radiographic terminology, positioning and procedures with the presentation of more complex theories to further the knowledge of the student. This course utilizes lecture, demonstration, self-directed learning activities, clinical experiences, and in depth critique of images that further develop critical thinking skills supporting clinical competencies, validation, and terminal evaluation events such as the American Registry of Radiologic Technologists (ARRT) simulated registry. The required ARRT competency of venipuncture and drawing up of contrast will be presented in the lab component of this course. Professional development and service learning will be introduced.

**Clinical Practicum V
RAD254c**

**Pre-req – RAD244c
3 credit hours**

This final clinical course requires students to integrate and apply all knowledge learned in previous courses to the production of high quality radiographs in the clinical setting. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal & ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.