

# Radiologic Technology

## **RA 107            RADIOLOGY FUNDAMENTALS AND CLINICAL ASSESSMENT**

Credit Hours: 3

Prerequisites: Admission to Radiologic Technology Program.

This course introduces the field of radiology and the basic skills required to perform duties in a patient care environment. Topics include patient care in the radiology department, vital signs, specific laboratory tests, infection control, sterile procedures, and contrast media. The student will also be required to complete a CPR class in conjunction with this course. Discussion of the historical background of the profession, current issues in imaging, ethical and legal issues associated with health care workers is included.

## **RA 115            RADIOGRAPHIC IMAGING I**

Credit Hours: 3

Prerequisites: RA 107

This course introduces the basic radiographic qualities and factors necessary to produce diagnostic quality radiographs. The student will understand visual perception of a radiograph, prime factors affecting radiographic quality, and the influence of body habitus and pathology. The student will examine the construction, properties, and purpose of: filters, beam restrictors, film, film processing, intensifying screens, and grids.

## **RA 121            RADIOGRAPHIC PROCEDURES/POSITIONING I**

Credit Hours: 2

Prerequisites: RA 107

This course discusses the positions and procedures performed by the radiographer. The course includes specific radiographic landmarks, anatomy, and other considerations for all procedures. Procedures include the chest and abdomen, upper extremities including the shoulder girdle, and the lower extremities including the pelvis.

## **RA 121L          RADIOGRAPHIC PROCEDURES/POSITIONING I LAB**

Credit Hours: 2

Prerequisites: RA 107

This course demonstrates the practical application of positions and procedures learned in RA 121.

## **RA 122            RADIOGRAPHIC PROCEDURES/POSITIONING II**

Credit Hours: 2

Prerequisites: RA 121

This course discusses the positions and procedures performed by the radiographer. The course includes specific radiographic landmarks, anatomy and other considerations for all procedures. Procedures include the bony thorax, gastrointestinal system and genitourinary system.

## **RA 122L          RADIOGRAPHIC PROCEDURES/POSITIONING II LAB**

Credit Hours: 1

Prerequisites: RA 121/121L

This course demonstrates the practical application of positions and procedures learned in RA 122.

## **RA 140            RADIATION BIOLOGY & PROTECTION**

Credit Hours: 2

This course discusses the theories of protecting all individuals from unnecessary radiation exposure as well as the harmful effects of radiation. Topics include the sources of radiation, production of scatter radiation, units of measuring radiation, ways of monitoring radiation, current NCRP guidelines, cell structure, cell sensitivity, and the harmful effects of radiation on the cell and individual.

## **RA 151            CLINICAL PRACTICUM I**

Credit Hours: 2

Prerequisites: RA 107

Under direct supervision, students gain hands-on experience in the clinical setting. Students provide basic patient care and become oriented to the clinical environment.

## **RA 153            CLINICAL PRACTICUM II**

Credit Hours: 3

Prerequisites: RA 151

Under direct supervision, students gain hands-on experience in the clinical setting. Students provide basic patient care and perform examinations learned in RA 121 and RA 121L and continue to enhance skills learned in RA 151.

## **RA 165            RADIOGRAPHIC IMAGING II**

Credit Hours: 3

Prerequisites: RA 115

This course builds on the information from RA 115. Discussion includes the radiographic properties of density, contrast, film sensitometry, recorded detail, and distortion. Technique charts, technique building, and AEC devices will also be included. Digital imaging, digital processing, and PACs will be described. An introduction to the imaging modalities may also be reviewed.

## **RA 210            RADIOGRAPHIC PATHOLOGY**

Credit Hours: 2

Prerequisites: SC 206

This course discusses the radiographer's role in pathological determination. Review is made of all major body systems, common pathologies of each system, proper procedures for determining pathologies, and treatments of pathologies. Special attention is made to cancer development, diagnosis, and treatment.

**RA 215 RADIOGRAPHIC IMAGING III**

Credit Hours: 3

Prerequisites: RA 165

This course expands on the topics covered in RA 165. Topics include physical principles of radiographic equipment, circuitry, x-ray tube, x-ray production, and fluoroscopy. Discussion also includes the principles and merits of a QA program as well as allowing the student to perform equipment testing and interpret the results.

**RA 220 RADIOGRAPHIC PROCEDURES/ POSITIONING III**

Credit Hours: 2

Prerequisites: RA 122/122L

This course discusses the positions and procedures performed by the radiographer. The course includes specific radiographic landmarks, anatomy, and other considerations for all procedures. Procedures include the lumbar spine, thoracic spine, cervical spine, sinus, skull, and facial bones.

**RA 220L RADIOGRAPHIC PROCEDURES/POSITIONING III LAB**

Credit Hours: 1

Prerequisites: RA 122/122L

This course demonstrates the practical application of positions and procedures learned in RA 220.

**RA 222 RADIOGRAPHIC PROCEDURES/POSITIONING IV**

Credit Hours: 2

Prerequisites: RA 220

This course discusses the positions and procedures performed by the radiographer. The course includes specific radiographic landmarks, anatomy, and other considerations for all procedures. This course focuses on special procedures performed by the radiographer. Topics include myelograms, arthrograms, venograms, bronchoscopy, ERCP, surgical radiography, and limited angiography. A film critique section is also completed during this course.

**RA 251 CLINICAL PRACTICUM III**

Credit Hours: 4

Prerequisites: RA 153

Under indirect supervision, students gain hands-on experience in the clinical setting. Students provide basic patient care and perform examinations learned in RA 220 and RA 220L and continue to enhance skills learned in RA 151 and RA 153.

**RA 253 CLINICAL PRACTICUM IV**

Credit Hours: 4

Prerequisites: RA 251

Under direct supervision, students gain hands-on experience in the clinical setting. Students provide basic patient care and perform examinations learned in RA 222. Under direct and indirect supervision, students gain hands-on experience and continue to enhance skills learned in RA 151, 153, and 251.

**RA 255 CLINICAL PRACTICUM V**

Credit Hours: 4

Prerequisites: RA 253

Under direct and indirect supervision, students gain hands-on experience and continue to enhance skills learned in RA 151, 153, 251 and 253.

**RA 260 MEDICAL ETHICS AND LAW**

Credit Hours: 1

Prerequisites: Admission to Radiologic Technology Program or Instructor Permission.

This course addresses a broad range of topics related to professional ethics and law including application of ethical principles, theories and models related to incidence and prevention of medical mistakes and state and federal laws that affect medical imaging.

**RA 262 APPLIED SECTIONAL ANATOMY AND IMAGING**

Credit Hours: 1

Prerequisites: SC 200 Anatomy & Physiology.

This course introduces the student to an understanding of the relationships of 3-dimensional anatomy to basic normal findings in Radiology, CT, MRI, and Ultrasound. Radiology imaging related to the anatomical areas being covered during each week will be highlighted in class, but requiring student-directed and/or team-directed self study. Working in small groups will promote team approach to learning and development of problem solving skills to assist each other in acquiring the knowledge base necessary for application. This course will prepare the student for the application of anatomy to the clinical sciences and application of radiologic imaging toward diagnosis of clinical disorders, complimenting Radiographic Pathology course.

**RA 270 RADIOGRAPHIC SEMINAR**

Credit Hours: 3

Prerequisites: Completion of Radiography Professional Coursework.

This course prepares the student to sit for the ARRT board exam in radiography and join the workforce. Topics include a thorough review of all radiographic professional coursework, exam administration, and exam procedures. The student will complete practice board exams and monthly developmental testing. The reflective practitioner model is developed with direct applications to the experience of the RT in the workforce.

**RA 280 PRINCIPLES OF COMPUTED TOMOGRAPHY (CT)**

Credit Hours: 2

Prerequisites: Instructor permission.

This course presents the information necessary to the practice of Computed Tomography. The course will include information on patient education, patient positioning, patient assessment, radiation protection, contrast, positioning, imaging protocols, CT physics, instrumentation, and quality control. Cross-sectional anatomy and pathology will be briefly covered. It is recommended that the student complete a cross-sectional anatomy course. The clinical component of the education is the responsibility of the student.

**RA 420 SPECIAL TOPICS II: MAMMOGRAPHY**

Credit Hours: 2

Prerequisites: Instructor permission.

This course presents the information necessary to the practice of mammography. The course, based on the guidelines of the MQSA and ARRT, will fulfill the didactic component of mammography education. The course will include breast anatomy, physiology, and pathology; mammographic equipment and quality assurance; mammographic technique and image evaluation; patient education; mammographic positioning; and interventional procedures. The clinical component of the education is the responsibility of the student.

**RA 430 SPECIAL TOPICS III: MRI**

Credit Hours: 2

Prerequisites: Instructor permission.

This course presents the information necessary to the practice of Magnetic Resonance Imaging. The course will include information on patient care and assessment, MRI safety, physical principles, data acquisition, instrumentation, MRI contrast, artifacts, and quality control. Cross-sectional anatomy and pathology will be briefly covered. It is recommended that the student complete a cross-sectional anatomy course. The clinical component of the education is the responsibility of the student.

**RA 440 SPECIAL TOPICS IV: CVIT**

Credit Hours: 2

Prerequisites: Instructor permission.

This course presents the information necessary to the practice of Cardiovascular and Interventional Technology. The course will include information on patient care, equipment and instrumentation, contrast agents, medications, emergency care, and procedures. The clinical component of the education is the responsibility of the student.

**RA 499 INDEPENDENT STUDY CLINICAL**

Credit Hours: 1-3

Prerequisites: Instructor permission.

This course offers the student a clinical externship for the RA 420, RA 430, and RA 440 courses. The course will allow the student to apply material learned in the Special Topics courses. Specific objectives, goals, clinical competencies, and clinical schedules will be developed with the student prior to the start of the externship.