

## **Course Descriptions**

### **RAD 100: Introduction to Radiography: Orientation**

An introduction to the program, the profession, and healthcare in general. The course explores the role of the radiographer, fundamentals of radiation protection, and ethical responsibilities. This course is part of orientation (160 hours)

- Prerequisite - Admission to the Radiologic Technology Program

### **RAD 101: Methods of Patient Care**

This course prepares the student for practical experience in the clinical setting. Includes communication skills, body mechanics, basic infection control, vital signs, routine and emergency patient care procedures will be described. The role of the radiographer will be identified. (45 hours - 3 credits)

- Prerequisite - Admission into the School of Radiologic Technology
- Co-requisite - RAD 102, 103, 104, 105, 106

### **RAD 102: Image Acquisition and Evaluation I**

This course is designed to provide an introduction to the basic concept of image formations. The general principles and theories of radiographic exposure including: Concepts in radiation production and control understanding the image receptor package, primary exposure factors exposure technique selection for image production. Problem solving skills, including critical thinking skills are reinforced during supervised laboratory experiment assignments. (45 hours - 3 credits)

- Prerequisite - Admission into the School of Radiologic Technology
- Co-requisite - RAD 101, 103, 104, 105, 106

### **RAD 103: Radiographic Procedures I**

Offers a thorough presentation of positioning nomenclature, body planes, and anatomic terms, and then proceeds to positioning principles for routine chests, abdominal studies and upper extremities to include shoulder girdle. All theoretical concepts are presented in correlation with radiographic images. (45 hours - 3 credits)

- Prerequisite - Admission into the School of Radiologic Technology
- Co-requisite - RAD 101, 102, 104, 105, 106

### **RAD 104: Medical Terminology**

Presented during orientation, content is designed to provide an introduction to the origins of medical terminology. A word building system is introduced and abbreviation

and symbols are discussed. This course will familiarize the student with the technical, medical and pathological terms pertinent to the medical profession and diagnostic imaging. (30 hours – 2 credits)

- Prerequisite - Admission to the School of Radiologic Technology
- Co-requisite - RAD 101, 102, 103 105, 106

### **RAD 105: Human Anatomy and Function I**

Content is designed to establish a knowledge base in anatomy and physiology. Components of the cells, tissues, organs and systems are described and discussed. (45 hours - 3 credits)

- Prerequisite - Admission to the Radiologic Technology
- Co-requisite - RAD 101, 102, 103, 104, 106

### **RAD 106: Clinical Practicum I**

The student under direct supervision from a staff technologist or clinical instructor begins observing radiographic examinations. The student participates in a limited fashion commensurate with their knowledge level. Students are required to successfully complete a minimum of four radiographic competency examinations to meet the minimum course requirements. (260 - 4 credits)

- Prerequisite - Admission to the Radiologic Technology
- Co-requisite - RAD 101, 102, 103, 104, 105

### **RAD 107: Radiologic Physics**

This course is designed to present the basic principles of radiation physics which include atomic structure, electricity, magnetism, and electromagnetism. The imaging system, including x-ray tube, the generator, and motors are presented, as well as x-ray production and its interaction with matter. (64 hours - 4 credits)

- Prerequisite - Math
- Co-requisite - RAD 102, 103, 104, 106, 107

### **RAD 108: Methods of Patient Care II**

This course is a continuation of Methods of Patient Care I with emphasis on contrast media, venipuncture and pharmacology, drug monitoring, and administration. Direct patient care methods will be learned, individuals will be able to handle physical, emotional and psychological demands with compassion, professionalism, accuracy and discernment. (45 hours - 3 credits)

- Prerequisite - RAD 101, 105

- Co-requisite - RAD 108, 109, 110, 111, 112, 113

### **RAD 109: Radiographic Procedures II**

This course is a continuation of Procedures I with major emphasis on lower extremities, pelvic girdle, vertebral column and bony thorax. Application of relevant technical factors and protection measure are included. (45 hours - 3 credits)

- Prerequisite - RAD 103, 104, 105, 106, 108
- Co-requisite - RAD 107, 110, 111, 112, 113

### **RAD 110: Image Acquisition and Evaluation II**

Continuation of Exposure I with emphasis on the concept of quality radiographs. The impact of grids, collimators, filters, screens and anatomic variants will be discussed. Problem solving skills and critical thinking skills are reinforced during supervised laboratory assignments. (45 hours - 3 credits)

- Prerequisite - RAD 101, 102, 103, 104, 105, 106, 108
- Co-requisite - RAD 107, 109, 110, 111, 112, 113

### **RAD 111: Clinical Practicum II**

Under direct supervision from a staff technologist or clinical instructor, the student should actively perform those examinations where competency has been successfully demonstrated during Clinical Education I and Continue to practice preparing for competency on remaining examinations studied during Radiographic Procedures I and II. (315 hours- 4 credit)

- Prerequisite - RAD 102, 103, 104, 105, 106, 108
- Co-requisite - RAD 107, 109, 110, 112, 113

### **RAD 112: Human Anatomy and Function II**

Continuation of Human Anatomy and Function I (45 hours - 3 credits)

- Prerequisite - RAD 105
- Co-requisite - RAD 107, 109, 110, 111, 113

### **RAD 113: Medical Ethics and Law**

A course designed to survey ethical and legal consideration in medicine with emphasis on Radiologic Practice. (45 hours – 3 credits)

- Prerequisite - RAD 101, 102, 103, 104, 105, 106, 108
- Co-requisite - RAD 107, 109, 110, 111, 112

### **RAD 114: Radiologic LAB**

A continuation of Clinical Practicum II, the students continue to apply classroom and laboratory knowledge and experiences to the clinical environment. (45 hours - 3 credits)

- Prerequisite - RAD 111
- Co-requisite - RAD 115, 116

### **RAD 115: Advanced Imaging/Cross Section Anatomy**

This course is designed to provide the fundamentals of computer technology in radiology. Course provides basic principles of cross-sectional anatomy, image acquisition, CT and MRI safety, protection, and image processing. Basic understanding of spiral –helical and multi-slice spiral – helical, artifacts is discussed. (60 hours - 3 credits)

- Prerequisite - RAD 107, 111, 112
- Co-requisite - RAD 113, 114, 116

### **RAD 115: Clinical Practicum III**

A continuation of Clinical Practicum II, the students continue to apply classroom and laboratory knowledge and experiences to the clinical environment. Practical application of all routine procedures, with patients continues. Competency grading continues. Elective assignments and CT assignments may begin. (320 hours - 4 credits)

- Prerequisite - RAD 106, 109, 110, 111, 112
- Co-requisite - RAD 114, 115

### **RAD 201: Radiographic Procedures III (Contrast)**

This course will provide the student with the knowledge to identify all radiographic cranial and facial anatomy and the skills necessary to perform standard radiographic procedures of the cranial and facial bones, also included in this course is emphasis on contrast and fluoroscopy studies. (45 hours - 3 credits)

- Prerequisite - RAD 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 115, 116
- Co-requisite - RAD 202, 203, 204, 205, 211

### **RAD 202: Radiation Protection/Radiation Biology**

A course designed to discuss and explore various biologic effects of ionizing radiations causes and considerations of cellular and organism damage and repair will be surveyed and discussed. Protection for patients, their family, technologists, and the staff are studied. The ALARA concept will be explained and explored. Units of exposure,

absorbed dose and dose equivalent will be reinforced. Government agencies along with their regulations will be discussed. Also, the biologic effects of ionizing radiation, cellular and organism damage and repair are discussed.

(45 hours - 3 credits)

- Prerequisite - RAD 101, 107, 108, 113, 114
- Co-requisite - RAD 201, 203, 204, 205, 211

### **RAD 203: Image Acquisition and Evaluation III**

This course will focus on Image Intensification, image critique, various recording system, AEC, C-arm and mobile radiography. Critical thinking skills are reinforced during supervised laboratory experiment assignments. (45 hours - 3 credits)

- Prerequisite - RAD 102, 103, 110
- Co-requisite - RAD 201, 202, 204, 205

### **RAD 204: Computerized Radiography and Digital Radiography**

This course is a continuation of the fundamental concept of computerized and digital radiography with emphasis on PACS, PACS equipment QC, and total quality management of CR and DR systems. (45 hours - 3 credits)

- Prerequisite - RAD 115, 203
- Co-requisite - RAD 206, 207, 209, 212, 213

### **RAD 205: Clinical Practicum IV**

Continuation of Clinical Practicum III emphasis is shifted to indirect supervision relative to areas of defined competency. The student continues to gain mastery in all other areas under direct supervision. Competency evaluations continue. (315 hours 4 credits)

- Prerequisite - RAD 106, 111, 115, 201

### **RAD 206: Radiographic Procedures IV**

This course covers interventional Radiology, ultrasound, pediatrics, geriatrics and all aspects of trauma radiology. (45 hours - 3 credits)

- Prerequisite - RAD 107, 201, 205
- Co-requisite - RAD 207, 209, 210, 211, 212

### **RAD 207: Image Acquisition and Evaluation IV**

This course presents a complete review of exposure factors. Elements of technique adjustments will be discussed and explored. The students will be required to synthesize theory and practice in the identification and correction of image errors. Test procedures for evaluating equipment will be discussed along with state and federal regulations. (45 hours - 3 credits)

- Prerequisite - RAD 203, 205
- Co-requisite - RAD 206, 207, 208, 209, 210, 211, 212

### **RAD 209: Computerized and Digital Quality Control and Quality Management**

The focus is directed on ensuring quality in PACS and quality acceptance testing with the digital projection imaging will be discussed. Quality control in fluoroscopic units will also to including tomographic quality control. (45 hours - 3 credits)

- Prerequisite - RAD 106, 111, 115, 116, 203, 207
- Co-requisite - RAD 204, 207, 208, 212

### **RAD 210: Senior Seminar / Review I**

JRC Standards of quality will be presented and review of previous courses during the first half of the Course. The second half will be directed to resume writing, mock interviews, volunteer product. (80 hours – 3 credits)

- Prerequisite - RAD 203
- Co-requisite - RAD 206, 207, 209, 211, 212, 213

### **RAD 211: Pathology**

Focus on radiographically important disease processes affecting the skeletal, renal, digestive, respiratory, cardiovascular, and neurological systems will be evaluated. Traumatic injury to the skeletal system will be emphasized. (45 hours - 3 credits)

- Prerequisite - RAD 101, 102, 104, 106, 112, 116
- Co-requisite - RAD 201, 202, 203, 205

### **RAD 212: Clinical Practicum V**

Continuation of Clinical Practicum IV with emphasis on mandatory and elective requirements of the A.R.R.T. Competency evaluations continues. (112 hours - 4 credits)

- Prerequisite - RAD 106, 111, 116, 203, 205
- Co-requisite - RAD 201, 202, 203, 204, 205, 209

### **RAD 213: Senior Seminar/Registry Review II**

A continuation of courses review for all previously taught material is provided in preparation for the student to sit for ARRT examination. Mock Examinations and review lectures will be presented. This is a mandatory course required for graduation. (168 hours - 4 credits)

- Prerequisite - all didactic courses, excluding co-requisite
- Co-requisite - 214

**RAD 214: Clinical Practicum VI**

A continuation of Clinical Practicum V with major emphasis on the measurement of terminal competencies. (112 hours – 4 credits)

- Co-requisites - RAD 213