

# RADIOGRAPHY COURSES (RTR)

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## **RTR-1000 Fundamentals of Radiologic Sciences (1-12 Credits)**

A course of study designed to provide an overview of the foundations in radiography and the practitioner's role in the health care delivery system. Principles, practices and policies of the health care organization are examined and discussed, in addition to the professional responsibilities of the radiographer.

**Typically offered:** All Sessions

## **RTR-1001 Image Analysis I (1-12 Credits)**

This course prepares students to evaluate radiographic images to ensure quality assurance standards are met. Image analysis guidelines, including characteristics of optimal images; image display; and terminology will be discussed.

**Typically offered:** All Sessions

## **RTR-1010 Medical Terminology (1-12 Credits)**

This course teaches the student how to properly incorporate medical terminology into the vocabulary. Students will learn the etymology of medical terminology; word-building processes; abbreviations; and practical applications within the health care field, including how to interpret requisitions and medical reports. Included in the course are correct pronunciation, spelling, and application of terms.

**Typically offered:** All Sessions

## **RTR-1020 Human Structure and Function I (3-12 Credits)**

This course is the first in a two part survey of the human body and how it functions. Cells, tissues, and physiology will be examined, in addition to the following body systems: Skeletal, muscular, digestive, reproductive, and respiratory. The mechanisms of disease, as well as growth and development will also be investigated.

**Typically offered:** All Sessions

## **RTR-1030 Intro to Principles of Radiographic Expo (3-12 Credits)**

This introductory course provides students with the basic knowledge of atomic structure, electricity, and electromagnetism. The foundations for radiation-producing equipment; the production of radiation; radiation safety; and radiation interaction with matter will be established.

**Typically offered:** All Sessions

## **RTR-1040 Patient Care I (2-12 Credits)**

This course is the first in a two part series that equips students with the knowledge to care for patients in the healthcare setting. Students will learn how to safely and effectively deliver care to a diverse patient population.

**Typically offered:** All Sessions

## **RTR-1050 Radiographic Procedures I (2-12 Credits)**

This course is the first of four that reviews anatomy, patient positioning, and projections of essential radiography procedures. Students are concurrently enrolled in Image Analysis and Laboratory courses that correspond with the Procedures course.

**Typically offered:** All Sessions

## **RTR-1050L Radiographic Procedures Lab I (1-12 Credits)**

This course is the first of four that reviews anatomy, patient positioning, and projections of essential radiography procedures. Students are concurrently enrolled in Image Analysis and Laboratory courses that correspond with the Procedures course.

**Typically offered:** All Sessions

## **RTR-1080 Clinical Education I (3-5 Credits)**

Content and clinical educational experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. The first five weeks provide the student an introduction to patient care and clinical practices; radiation safety; clinical policies and procedures; and an overview of clinical progression required to complete the program. The remaining eight weeks allow for the student to utilize didactic concepts in the clinical setting. Through structured, sequential, competency-based clinical assignments, concepts of team practice; patient care and assessment; professional development; and competent performance of radiologic imaging and total quality management are discussed, examined, and evaluated.

**Typically offered:** All Sessions

## **RTR-1090 Ethics and Law in Radiologic Sciences (1-12 Credits)**

Content provides a foundation in ethics and law related to the practice of medical imaging. An introduction to terminology, concepts and principles will be presented. Students will examine a variety of ethical and legal issues found in clinical practice.

**Typically offered:** All Sessions

## **RTR-1101 Image Analysis II (1-12 Credits)**

This course prepares students to evaluate radiographic images to ensure quality assurance standards are met. Image analysis guidelines, including characteristics of optimal images; image display; and terminology will be discussed.

**Typically offered:** All Sessions

## **RTR-1120 Human Structure and Function II (3-12 Credits)**

This course is a continuation of RTR 1020. A survey of cell, tissues, and pathologies is conducted. Additionally, the following body systems are examined: blood, heart, integumentary, nervous, endocrine, lymphatic, urinary, and reproductive. The fundamentals of sectional anatomy relative to routine radiography are addressed.

**Typically offered:** All Sessions

## **RTR-1135 Principles of Radiographic Exposure I (3-12 Credits)**

This course establishes the foundation of image production, quality, and equipment. Concepts of radiation safety and protection are reinforced.

**Typically offered:** All Sessions

## **RTR-1141 Patient Care II (2-12 Credits)**

This course is designed to provide the advanced concepts of patient care. Trauma, mobile and surgical radiography are described. Basic concepts of pharmacology are discussed. The theory and practice of basic techniques of venipuncture and administration of diagnostic contrast agents and/or intravenous medications is included. The appropriate delivery of patient care during these procedures is emphasized.

**Typically offered:** All Sessions

## **RTR-1150 Radiographic Procedures II (2-12 Credits)**

This course is the second of four that reviews anatomy, patient positioning, and projections of essential radiography procedures. Students are concurrently enrolled in Image Analysis and Laboratory courses that correspond with the Procedures course.

**Typically offered:** All Sessions

## **RTR-1150L Radiographic Procedures II Lab (1-12 Credits)**

Utilizing the non-energized laboratories, students are provided the instruction to perform essential procedures. Student practice and subsequent procedure testing are included in this course.

**Typically offered:** All Sessions

**RTR-1171 Digital Image Acquisition & Display (2-12 Credits)**

Content imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Image acquisition, display, archiving, and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented.

**Typically offered:** All Sessions

**RTR-1180 Clinical Education II (3-5 Credits)**

Content and clinical educational experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures.

Through structured, sequential, competency-based clinical assignments concepts of team practice, patient care and assessment, professional development, and competent performance of radiologic imaging and total quality management are discussed, examined and evaluated.

**Typically offered:** All Sessions

**RTR-1280 Clinical Education III (3-5 Credits)**

Content and clinical educational experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures.

Through structured, sequential, competency-based clinical assignments, concepts of team practice; patient care and assessment; professional development; and competent performance of radiologic imaging and total quality management are discussed, examined, and evaluated. As part of this course, students will research and present a topic that applies to, and further enhances knowledge of the radiological sciences.

**Typically offered:** All Sessions

**RTR-2001 Image Analysis III (1-12 Credits)**

This course is designed to provide additional instruction when analyzing advanced radiographic images. Students will be able to determine if a radiograph has an adequate level of contrast and density, and what factors to adjust if a radiograph is inadequately exposed. The processes for properly evaluating radiographic images with a higher degree of critical thinking will be taught. Actual images will be used for demonstration and analysis.

**Typically offered:** All Sessions

**RTR-2010 Radiographic Pathology (2-12 Credits)**

This course is designed to introduce concepts related to disease and etiological consideration with emphasis on radiologic appearance of disease and impact on exposure factor selection. It also presents basic information on the pathologic process; signs and symptoms; and diagnosis and prognosis of various diseases.

**Typically offered:** All Sessions

**RTR-2020 Radiation Biology & Advanced Protection (2-12 Credits)**

The Radiation Biology content of the course provides an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation. The Advanced Protection content of the course is designed to present an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and healthcare organizations are incorporated

**Typically offered:** All Sessions

**RTR-2035 Principles of Radiographic Exposure II (3-12 Credits)**

This course is a study of radiographic, fluoroscopic, mobile and tomographic equipment requirements and design. Students will study the advanced aspects of radiographic technique and various imaging modalities.

**Typically offered:** All Sessions

**RTR-2050 Radiographic Procedures III (2-12 Credits)**

This is a course of advanced radiographic positions building on the basic procedures learned in RTR 1050 and RTR 1150.

**Typically offered:** All Sessions

**RTR-2050L Radiographic Procedures III Lab (1-12 Credits)**

This course is a simulated hands on class demonstrating and reinforcing anatomical positioning and its clinical applications. This course builds on the basic procedures learned in courses RTR 1050L and RTR 1150L.

**Typically offered:** All Sessions

**RTR-2080 Clinical Education IV (3-5 Credits)**

Content and clinical educational experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures.

Through structured, sequential, competency-based clinical assignments concepts of team practice, patient care and assessment, professional development, and competent performance of radiologic imaging and total quality management are discussed, examined and evaluated.

**Typically offered:** All Sessions

**RTR-2101 Image Analysis IV (1-12 Credits)**

This course prepares students to evaluate radiographic images to ensure quality assurance standards are met. Image analysis guidelines, including characteristics of optimal images; image display; and terminology will be discussed.

**Typically offered:** All Sessions

**RTR-2125 Special Procedures (1-12 Credits)**

This course is designed to concentrate on the advanced studies performed in the radiology department, such as procedures of the urinary and digestive systems, and those performed in the interventional suite. Students will learn about injection instrumentation, as well as contrast indications and safety.

**Typically offered:** All Sessions

**RTR-2150 Radiographic Procedures IV (2-12 Credits)**

This is a course of advanced radiographic positions building on the procedures learned in courses RTR 1050, RTR 1150 and RTR 2050.

**Typically offered:** All Sessions

**RTR-2150L Radiographic Procedures IV Lab (1-12 Credits)**

Utilizing the non-energized laboratories, students are provided the instruction to perform advanced imaging procedures. Student practice and subsequent procedure testing are included in this course.

**Typically offered:** All Sessions

**RTR-2170 Advanced Imaging Modalities (1-12 Credits)**

This is a specialized course of study designed to enhance knowledge of radiologic imaging by introducing the student to advanced imaging modalities. Modalities that can be pursued as post-primary pathways will be discussed. Additionally, career opportunities and salaries will be explored.

**Typically offered:** All Sessions

**RTR-2171 Mamography (elective) (2-12 Credits)**

This is a specialized course of study detailing the radiographic examination of the breasts and related positioning and pathology.

This course will provide both a historical view of mammography, including breast anatomy and physiology, positioning, compression, technique selection, patient education, quality control, and advanced imaging, including implants and studies related to breast pathology and specialized views. The student will learn quality control, optimal functioning of dedicated mammography equipment including stereotactic needle biopsies and digital mammography. This is an elective course.

**Typically offered:** All Sessions

**RTR-2172 Computed Tomography (elective) (2-12 Credits)**

Content provides entry-level radiography students with the principles related to computed tomography (CT) imaging.

**Typically offered:** All Sessions

**RTR-2180 Clinical Education V (3-5 Credits)**

Content and clinical educational experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures.

Through structured, sequential, competency-based clinical assignments concepts of team practice, patient care and assessment, professional development, and competent performance of radiologic imaging and total quality management are discussed, examined and evaluated.

**Typically offered:** All Sessions

**RTR-2190 Career Development (1-12 Credits)**

This course is designed to introduce the student to a comprehensive approach to career development & planning. Students will examine self-awareness and career exploration which should then be incorporated into self-marketing techniques leading to long term effective career decision making. Students will be exposed to useful job searching techniques necessary in today's job marketplace.

**Typically offered:** All Sessions

**RTR-2260 Registry Review (3-12 Credits)**

This course is a comprehensive review of radiography. It is designed to be both a review and detailed guide, with questions and answers, for students preparing to successfully pass the Registry examination administered by the ARRT. All subject areas will be reviewed and test taking strategies discussed.

**Typically offered:** All Sessions