

Radiologic Technology

RT100 Patient Care I / Ethics

Cr-1

This course prepares the radiologic technology student to evaluate and meet the physical, cultural, and emotional needs of the patient. Topics include basic arrhythmia and basic life support. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. Corequisites: RT101 Fundamentals of Radiography, RT 102 Radiographic Procedures/Pathology 1, RT 103 Clinical Education Fundamentals, BI 216 Human Anatomy & Physiology 1.

RT101 Fundamentals of Radiology

Cr-2

This course provides an introduction to the basic concepts of radiographic physics and exposure. Topics include detailed history of x-ray, radiographic tube construction, process of x-ray production, x-ray beam characteristics, and the photographic and geometric properties of the radiographic image. The foundations of radiography and the practitioners' role in the health care delivery system are discussed. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. Corequisites: RT100 Patient Care I/ Ethics, RT102 Radiographic Procedures/Pathology I, RT103 Clinical Education Fundamentals, and BI216 Human Anatomy & Physiology 1.

RT102 Radiographic Procedures / Pathology

Cr-3

I

This course introduces basic terminology, principles of radiographic procedures, and directional terms in relation to the human body. Students practice under simulated conditions in a laboratory setting before actually performing on patients in a clinical setting. Topics include proper use of radiographic equipment and patient safety issues. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. Corequisites: RT100 Patient Care I/Ethics, RT101 Fundamentals of Radiography, and BI216 Human Anatomy & Physiology 1.

RT103 Clinical Education Fundamentals

Cr-3

This course introduces basic terminology, principles of radiographic procedures, and directional terms in relation to the human body. Students practice under simulated conditions in a laboratory setting before actually performing on patients in a clinical setting. Topics include proper use of radiographic equipment and patient safety issues. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. Corequisites: RT100 Patient Care I/Ethics, RT101 Fundamentals of Radiography, and BI216 Human Anatomy & Physiology 1.

RT104 Patient Care II / Pharmacology & IV Therapy

Cr-1

This course provides students with basic pharmacologic principles and practices, knowledge of the administration of radiopaque contrast media, and related emergency medications. IV Therapy instruction component provides basic knowledge and theory related to IV therapy with regard to fluids, fluid administration, anatomy and physiology, venipuncture, infection prevention, and complications. Prerequisite: RT 100 Patient Care I/Ethics. Corequisites: RT 105 Image Production & Evaluation I, RT 106 Radiographic Procedure / Pathology 2, RT 107 Clinical Education Intermediate I, BI 217 Human Anatomy & Physiology 2.

RT105 Image Production & Evaluation I

Cr-2

This course provides students with a knowledge base in factors that govern the image production process. Film-screen imaging with related accessories, including radiographic grids, is emphasized. The components, principles, and operation of digital imaging systems found in diagnostic radiology are discussed. Prerequisite:

RT100 Patient Care I/Ethics, RT101 Fundamentals of Radiography, RT102 Radiographic Procedures/Pathology, RT103 Clinical Education Fundamentals. Corequisites: RT104 Patient Care II/Pharmacology & IV Therapy, RT106 Radiographic Procedures/Pathology 2, RT107 Clinical Education Intermediate.

RT106 Radiographic Procedures / Pathology II

Cr-3

This course introduces students to the skills necessary to perform the routine radiographic procedures with confidence. Through laboratory demonstration, supervised lab practice, and image evaluation, students receive instruction on the proper positioning of the patient to achieve a finished radiographic image displaying specific structures on particular body parts. The course also includes pathologic indications for each projection and appropriate adjustments for certain pathologic conditions that may affect the patient's ability to assume certain positions. Proper equipment manipulation and patient safety issues are discussed throughout the course. Prerequisite: RT101 Fundamentals of Radiography, RT102 Radiographic Procedures/Pathology I, RT103 Clinical Education Fundamentals. Corequisites: RT104 Patient Care II/ Pharmacology & IV Therapy, RT107 Clinical Education Intermediate I.

RT107 Clinical Education Intermediate I

Cr-5

In this course, students experience day-to-day real life situations in health care which are essential to foster a professional demeanor, compassionate behavior, desirable work ethic, and the skills necessary to perform radiographic procedures and produce radiographic images for the diagnosis. This clinical component complements the clinical competencies learned. Prerequisite: RT103 Clinical Education Fundamentals. Corequisites: RT104 Patient Care 2/Pharmacology & IV Therapy, RT105 Image Production & Evaluation I, RT106 Radiographic Procedures/Pathology II.

RT108 Clinical Education Intermediate II

Cr-8

In this course, students obtain clinical expertise in an actual radiology department setting and experience day-to-day real life situations in health care. Professional demeanor, compassionate behavior, desirable work ethic, and the skills necessary to perform radiographic procedures and produce radiographic images for diagnosis are practices. Students develop clinical skills which complement the clinical competencies learned. Prerequisite: RT107 Clinical Education Intermediate I.

RT109 Radiation Biology I

Cr-2

This course is the first in a two semester sequence in Radiation Biology. Topics include an introduction to basic concepts of physics that relate to radiation absorption and scatter, analysis of ionizing and nonionizing radiation, the electromagnetic spectrum, the process of interaction between radiation and matter, sources of radiation both natural and artificial, and units of measure. Basic concepts of molecular and cell biology in the context of the sequence of events that occur after absorption of energy from ionizing radiation and consequences on living systems are discussed. Prerequisite: RT101 Fundamentals of Radiography. Corequisites: RT200 Advanced Procedures/Sectional Anatomy, RT201 Image Production & Evaluation II, and RT202 Clinical Education Advanced.

RT200 Advanced Procedures / Sectional Anatomy

Cr-1

This course introduces advanced procedures that require the use of contrast media and the pathologies indicated for these exams. Topics include general and specialized procedures involving the use of contrast agents of the reproductive tracts as well as the spinal column; basic anatomy of the brain, chest, abdomen, and pelvis as

viewed in a cross section of the anatomy. Patient and equipment safety, proper room set-up, supervised lab practices, and film evaluation sessions are demonstrated and practiced. Phantoms are used to help assess the student's ability to perform proper positioning of the skull and facial bones. Prerequisite: RT101 Fundamentals of Radiography. Corequisites: RT109 Radiation Biology I, RT201 Image Production & Evaluation II, RT202 Clinical Education Advanced.

RT201 Image Production & Evaluation II **Cr-2**

This course provides a knowledge base in factors that govern and influence producing and recording radiological images. Film and electronic imaging with related accessories are emphasized. Theory application and accessory/equipment quality measurements are demonstrated. Prerequisite: RT105 Image Production & Evaluation I. Corequisites: RT109 Radiation Biology I, RT200 Advanced Procedures/Sectional Anatomy, RT202 Clinical Education Advanced.

RT202 Clinical Education Advanced **Cr-6**

This course provides advanced clinical experience in day-to-day real life situations in health care which are essential to foster a professional demeanor, compassionate behavior, desirable work ethic, and the skills necessary to perform radiographic procedures and produce radiographic images for diagnosis. Students develop clinical skills which complement the clinical competencies learned. Prerequisite: RT108 Clinical Education Intermediate II. Corequisites: RT109 Radiation Biology I, RT200 Advanced Procedures/Sectional Anatomy, RT201 Image Production & Evaluation II.

RT203 Radiographic Physics **Cr-2**

This course explores the basic concepts of the science and technology of x-ray imaging. Topics include the study of matter, energy, the electromagnetic spectrum, and ionizing radiation. Prerequisite: RT101 Fundamentals of Radiography. Corequisites: RT204 Radiation Biology 2, RT205 Advanced Imaging Procedures/ Pathology, and RT207 Clinical Education Mastery.

RT204 Radiation Biology II **Cr-2**

This course is the second in a two semester sequence in Radiation Biology. Topics include radiation effects on organ systems, somatic and genetic damage factors, mutagens responsible for genetic mutations, the doubling dose concept, acute radiation syndromes, embryologic effects during pregnancy, and occupational and non-occupational dose limits. Additional instruction is provided on safety and regulation issues. Prerequisite: RT109 Radiation Biology I. Corequisites: RT203 Radiographic Physics, RT205 Advanced Imaging Procedures/Pathology, and RT207 Clinical Education Mastery.

RT205 Advanced Imaging Procedures / Pathology **Cr-1**

This course provides an overview of advanced imaging topics including equipment; computers in imaging; basic principles of the various health science professions; career planning; forensic radiography; and the principles, practices and policies of healthcare organizations. Theories of disease causation and the pathophysiologic disorders that compromise healthy systems are introduced. Prerequisite: RT102 Radiographic Procedures/Pathology I, RT106 Radiographic Procedures/Pathology II, RT200 Advanced Procedures/Sectional Anatomy. Corequisites: RT203 Radiographic Physics, RT204 Radiation Biology II, and RT207 Clinical Education Mastery.

RT207 Clinical Education Mastery **Cr-7**

This course provides capstone clinical experience in day-to-day real life situations in health care that are essential to foster a professional demeanor, compassionate behavior, desirable work ethic and skill necessary to perform radiographic procedures and produce radiographic images for diagnosis. Students develop clinical skills to complement the clinical competencies learned. Prerequisite:

RT103 Clinical Education Fundamentals, RT107 Clinical Education Intermediate I, RT108 Clinical Education Intermediate II, RT202 Clinical Education Advanced. Corequisites: RT203 Radiographic Physics, RT204 Radiation Biology II, and RT205 Advanced Imaging Procedures/ Pathology.