

RADIOLOGIC SCIENCES (RS)

RS 100. Fundamentals of Diagnostic Imaging. 1 Credit.

This course provides the student with a basic knowledge of the fundamentals of diagnostic imaging practice. Topics include defining diagnostic imaging as it relates to all imaging modalities, historical development of the profession, introduction to current and emerging practice arenas, and application of professional terminology. Students complete a self-study in medical terminology.

Prerequisites: None

Offered: Every year, Fall

RS 101. Introduction to Diagnostic Imaging. 3 Credits.

Designed to provide an orientation to radiologic sciences, this course includes history, ethics and basic principles of radiation protections, medial and medicolegal terminology, as well as preclinical observation.

Prerequisites: Take RS 100.

Offered: Every year, Spring

RS 201. Human Anatomy Imaging I. 1 Credit.

This course presents in-depth consideration of human anatomy within systems located in the chest, abdomen and upper extremity of the body. Students discuss the structure and function of each anatomic component within each region. Conventional anatomic illustrations are correlated with their radiographic counterpart. The radiographic appearance of specific structures as demonstrated on conventional radiographic images is correlated to images obtained using other advanced imaging modalities such as computed tomography, magnetic resonance and sonography.

Prerequisites: Take RS 253 and RS 297 and RS 297L and RS 222 and RS 222L and RS 242 and RS 242L and BIO 212 and BIO 212L.

Offered: Every year, Fall

RS 202. Human Anatomy Imaging II. 1 Credit.

This course presents in-depth consideration of human anatomy within systems located in the head, neck, pelvis and lower extremity. For each region, students discuss the structure and function of each anatomic component. Conventional anatomic illustrations are correlated with their radiographic counterpart. The radiographic appearance of specific structures as demonstrated on conventional radiographic images is correlated to images obtained using other advanced imaging modalities such as computed tomography, magnetic resonance and sonography.

Prerequisites: Take RS 201 and RS 232 and RS 232L and RS 260 and RS 254 and RS 318.

Offered: Every year, Spring

RS 212. Radiographic Procedures I. 2 Credits.

This course introduces the student to the basic concepts, principles and applications of radiographic and radiologic procedures. Additional applications related to orthopaedic terminology, pathologies and procedures, trauma and patient-related modifications also are presented.

Prerequisites: Take RS 101 and MA 275 and CHE 101 CHE 101L or PHY 101 PHY 101L and HSC 202 and BIO 103 or BIO 101 BIO 101L and BIO 102 BIO 102L.

Corequisites: Take RS 212L.

Offered: Every year, Fall

RS 212L. Laboratory Practicum I. 2 Credits.

This practicum develops preclinical competency in radiographic procedures studied in RS 212, as well as routine hospital procedures and radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.

Corequisites: Take RS 212.

Offered: Every year, Fall

RS 215. Radiation Safety and Protection. 3 Credits.

Students are introduced to the effects of ionizing radiation on biological systems at the molecular, cellular, organism, and community levels, with emphasis on medical implications and radiation protection.

Prerequisites: Take RS 201 and RS 232 and RS 232L and RS 254 and RS 260 and RS 318.

Offered: Every year, Spring

RS 222. Radiographic Procedures II. 3 Credits.

This course builds on the foundations developed in RS 212. This course provides continued integration and expansion on the concepts, principles and applications of radiographic and radiologic procedures.

Prerequisites: Take RS 212 RS 212L RS 241 RS 241L.

Corequisites: Take RS 222L.

Offered: Every year, Spring

RS 222L. Laboratory Practicum II. 2 Credits.

Designed to develop preclinical competency in radiographic procedures studied in RS 222, this practicum focuses on radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.

Prerequisites: Take RS 212 RS 212L RS 241 RS 241L.

Corequisites: Take RS 222.

Offered: Every year, Spring

RS 232. Radiographic Procedures III. 3 Credits.

This course provides continued integration and expansion on the concepts, principles and applications developed in RS 212 and RS 222.

Prerequisites: Take RS 222 RS 222L RS 242 RS 242L RS 253 RS 297 RS 297L BIO 212 BIO 212L.

Corequisites: Take RS 232L.

Offered: Every year, Fall

RS 232L. Laboratory Practicum III. 2 Credits.

This practicum is designed to develop preclinical competency in routine hospital procedures and radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.

Prerequisites: Take RS 222 RS 222L RS 242 RS 242L RS 253 RS 297 RS 297L BIO 212 BIO 212L.

Corequisites: Take RS 232.

Offered: Every year, Fall

RS 241. Radiographic Image Production and Evaluation. 3 Credits.

This course presents the basic principles, concepts and practical applications of radiographic image production and diagnostic quality.

Topics include radiation production, description and proper selection of exposure factors, radiation protection, imaging media, imaging equipment and basic imaging formulas.

Prerequisites: Take RS 101 and MA 275 and CHE 101 CHE 101L or PHY 101 PHY 101L and HSC 202 and BIO 103.

Corequisites: Take RS 241L.

Offered: Every year, Fall

RS 241L. Radiographic Image Production and Evaluation Lab I. 1 Credit.

The laboratory, which accompanies RS 241, is designed to demonstrate and reinforce the concepts and principles presented in class. (2 lab hrs.)

Corequisites: Take RS 241.

Offered: Every year, Fall

- RS 242. Radiographic Image Production and Evaluation II. 3 Credits.**
This course expands on the foundations developed in RS 241. Integration and application of these foundations includes the development of exposure charts, methods of image processing, and the causation and identification of image artifacts. The course also incorporates quality control concepts and testing, and introduces basic terminology and principles of quality control and digital imaging systems.
Prerequisites: Take RS 241 RS 241L RS 212 RS 212L.
Corequisites: Take RS 242L.
Offered: Every year, Spring
- RS 242L. Radiological Processing and Exposure Lab. 1 Credit.**
This laboratory, which accompanies RS 242, is designed to demonstrate and reinforce the concepts and principles presented in class. (2 lab hrs.)
Prerequisites: Take RS 241, RS 241L RS 212 RS 212L.
Corequisites: Take RS 242.
Offered: Every year, Spring
- RS 250. Radiologic Clinical Education I. 2 Credits.**
Students are provided with their initial clinical experience under the supervision of certified clinical instructors and clinical staff. Focus is on developing clinical competency and proficiency related to radiologic procedures and concepts taught in RS 212 and RS 241.
Prerequisites: Take RS 212 RS 212L and RS 241 RS 241L.
Offered: Every year, Spring
- RS 253. Radiologic Clinical Education II. 4 Credits.**
This course, a continuation of RS 250, is a 12-week, 35 hour-per-week summer clinical experience under the supervision of certified clinical instructors and clinical staff. Clinical competency and proficiency related to the performance of radiographic procedures and concepts are continually developed and assessed.
Prerequisites: Take RS 250 RS 242 RS 242L RS 222 RS 222L RS 297 RS 297L.
Offered: Every year, Summer
- RS 254. Radiologic Clinical Education III Education IV. 3 Credits.**
This course, a continuation of RS 253, is a clinical experience under the supervision of certified clinical instructors and clinical staff. Clinical competency and proficiency related to the performance of radiographic procedures and concepts are continually developed and assessed.
Prerequisites: Take RS 253 RS 242 RS 242L RS 222 RS 222L RS 297 RS 297L BIO 212 BIO 212L.
Offered: Every year, Fall
- RS 255. Radiologic Clinical Education IV. 3 Credits.**
This course, a continuation of RS 254, is the final clinical experience under the supervision of certified clinical instructors and clinical staff. Clinical competency and proficiency related to the performance of all radiographic procedures and concepts are assessed.
Prerequisites: Take RS 254 RS 232 RS 232L RS 260 RS 318 RS 201 RS 414.
Offered: Every year, Spring
- RS 260. Radiographic Physics and Instrumentation. 3 Credits.**
This course presents an analysis of the production of X-rays and the interaction of radiation with matter, units of radiation measurements and radiation protection.
Prerequisites: Take RS 242 RS 242L and RS 222 RS 222L and RS 297 RS 297L and RS 253 and BIO 212 and BIO 212L.
Offered: Every year, Fall
- RS 290. Advanced Radiographic Procedures IV. 3 Credits.**
This course is the final in the series of Radiographic Positioning courses that will provide continued integration and expansion on the concepts, principles and applications developed in the Radiologic Sciences program. Students are introduced to advanced imaging modalities, healthcare informatics and future directions in imaging. Review of ARRT examination content, application, and state licensure requirements will be discussed.
Prerequisites: Take RS 232 and RS 232L and RS 318 and RS 201 and RS 414 and RS 254 and RS 260.
Corequisites: Take RS 290L
Offered: Every year, Spring
- RS 290L. Laboratory Practicum. 1 Credit.**
This practicum is designed to develop preclinical competency in routine hospital procedures and radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.
Prerequisites: Take RS 232 RS 232L and RS 318 and RS 201 and RS 414 and RS 254.
Corequisites: Take RS 290
Offered: Every year, Spring
- RS 297. Methods of Patient Care. 2 Credits.**
This course focuses on a study of skills in providing humanistic care for the well, acute or chronically ill individual, including preparing patients for invasive as well as non-invasive imaging studies; basic clinical skills in infection control, including aseptic technique, venipuncture, vital signs and O2 administration; effective communication with emphasis on problem-solving skills.
Prerequisites: Take RS 101 RS 212 RS 212L RS 241 RS 241L.
Corequisites: Take RS 297L
Offered: Every year, Spring
- RS 297L. Methods of Patient Care Lab. 1 Credit.**
This lab develops preclinical competency for the procedures described and demonstrated in RS 297. (2 lab hrs.)
Prerequisites: Take RS 101 RS 212 RS 212L RS 241 RS 241L.
Corequisites: Take RS 297
Offered: Every year, Spring
- RS 299. Independent Study. 1-4 Credits.**
This course presents the student with an opportunity to expand his or her professional expertise in areas that enhance managerial or research capabilities.
Prerequisites: None
Offered: As needed
- RS 318. Pathology for Imaging Sciences. 3 Credits.**
This course provides an introduction to the basic study of disease, including etiology, pathophysiology and current diagnostic procedures. Normal structure and function are reviewed prior to the discussion of each anatomic system.
Prerequisites: Take RS 222 RS 222L and BIO 212 BIO 212L and RS 242 RS 242L RS 250 and RS 297 RS 297L and RS 253.
Offered: Every year, Fall
- RS 336. Pharmacology for the Radiographer. 2 Credits.**
The major classifications/categories, clinical applications and implications of pharmaceuticals used in diagnostic imaging and interventional procedures are presented.
Prerequisites: Take RS 260 and RS 414 and RS 232 RS 232L and RS 254 RS 201 and RS 318.
Offered: Every year, January Term

RS 414. Research: Analysis and Critique (DMS 414). 3 Credits.

This course explores the basic elements of health care research including different types of research models and research strategies. Students explore the differences between a variety of publication types, including editorials, case studies and peer-reviewed research articles. Students also learn techniques for database queries.

Prerequisites: Take RS 253 and RS 297 RS 297L and RS 222 RS 222L and RS 242 RS 242L and BIO 212 BIO 212L.

Offered: Every year, Fall

RS 415. Introduction to Magnetic Resonance Imaging. 3 Credits.

Magnetic resonance imaging is studied as it pertains to diagnostic imaging. Topics include mathematics, physical principles, imaging concepts, equipment, image quality, clinical applications and biologic effects of MRI. Prerequisite: ARRT certification or permission of the department.

Offered: Every year, Fall

RS 499. Capstone (DMS 499). 3 Credits.

This capstone course is intended for radiologic sciences majors and diagnostic medical sonography majors in their final semester. Students are required to develop a research project as it relates to the field of diagnostic imaging. The project may relate to the student's chosen focus and must include either a formal thesis paper or poster presentation.

Prerequisites: Take RS 260 and RS 414 and RS 232 RS 232L and RS 254 and RS 201 and RS 318.

Offered: Every year, Spring