

# RADIOLOGIC AND IMAGING SCIENCE (RIS)

## RIS 34001 INTRODUCTION TO DIAGNOSTIC MEDICAL SONOGRAPHY 1 Credit Hour

Provides an introduction to diagnostic medical sonography. The course orients new students to the profession. Topics covered include basic sonographic principles, scanning technique, and introduction patient management techniques.

**Prerequisite:** Special approval.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter

## RIS 34003 RADIATION THERAPY PRINCIPLES AND PRACTICE I 3 Credit Hours

An overview of cancer, radiation therapy and its physical and technical aspects. Includes the roles/responsibilities of the therapist, treatment parameters, documentation and delivery of patient care, education and procedures.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34030.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter-IP

## RIS 34004 RADIATION THERAPY PATIENT MANAGEMENT 3 Credit Hours

Provides the basic concepts in patient assessment and evaluation. Includes communication skills, infection control, nutrition, medications, exams, emergencies, patient transfer techniques, medical ethics and law as applied to radiation therapy.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34030.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter-IP

## RIS 34008 RADIATION THERAPY PHYSICS I 3 Credit Hours

Introduction to radiation therapy physics, including the fundamentals of atomic structure, radiation properties, radiation production, radiation quality, interactions of radiation with matter and principles of radiation detectors.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34030.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## RIS 34030 RADIATION THERAPY CLINICAL EDUCATION I 1 Credit Hour

Observation and supervised clinical education with emphasis on administering radiation therapy treatments and patient care.

**Prerequisite:** Radiologic and imaging sciences major; and special approval.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 2.5 lab, 5 other

**Grade Mode:** Standard Letter-IP

## RIS 34040 PATIENT MANAGEMENT IN DIAGNOSTIC MEDICAL SONOGRAPHY 3 Credit Hours

Methods of patient management in diagnostic medical sonography are examined with emphasis on patient communication, clinical assessment, medical legal aspects, medical records, emergencies, pharmacology, safety issues, ethics and critical thinking.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34045.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## RIS 34042 ABDOMINAL SONOGRAPHY I 3 Credit Hours

Anatomy, physiology and pathology of the abdomen; instrumentation and scanning techniques; normal and abnormal sonographic appearances of abdominal structures will be presented.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34045.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## RIS 34044 ULTRASOUND PHYSICS AND INSTRUMENTATION 3 Credit Hours

Ultrasound principles to include interaction of sound with matter, propagation of sound in tissue, physical units, transducer parameters, image storage and display, quality assurance, bioeffects, image artifacts and physical principles of doppler.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 34045.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## RIS 34045 ULTRASOUND CLINICAL EDUCATION I 2 Credit Hours

Provides clinical education and experience at a lab and clinical site to allow students the opportunity to practice skills necessary to obtain high quality sonographic images, to alter protocols on patients and to identify image quality problems. Content includes sonography of the liver, gallbladder, pancreas and spleen.

**Prerequisite:** Radiologic and imaging sciences major; and special approval.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 3 lab, 1 other

**Grade Mode:** Standard Letter-IP

## RIS 34052 ABDOMINAL SONOGRAPHY II 3 Credit Hours

Continuation of RIS 34042; anatomy, physiology and pathology of the abdomen; instrumentation and sonographic scanning techniques; normal and abnormal sonographic appearance of abdominal structures will be presented.

**Prerequisite:** RIS 34042; and radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 34060 ULTRASOUND CLINICAL EDUCATION II 4 Credit Hours**

Provides clinical education and experience at a clinical site to allow students the opportunity to practice skills necessary to obtain high quality sonographic images, to alter protocols based on patients and to identify image quality problems. Content includes sonography of the abdominal vessels, kidneys, adrenal glands, lymphatics and gynecologic pelvis.

**Prerequisite:** RIS 34045.

**Corequisite:** RIS 34052.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 3 lab, 5 other

**Grade Mode:** Standard Letter-IP

**RIS 34062 OBSTETRICS AND GYNECOLOGY SONOGRAPHY I 3 Credit Hours**

Anatomy and pathophysiology of the non-pregnant female pelvis; instrumentation and scanning techniques; normal and abnormal sonographic appearances; and findings of the female reproductive tract are covered.

**Prerequisite:** RIS 34045; and radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 34072 SUPERFICIAL STRUCTURES SONOGRAPHY 2 Credit Hours**

Anatomy and pathophysiology of superficial structures; instrumentation and scanning techniques; normal and abnormal sonographic appearances of superficial structures; correlation with laboratory findings and other imaging modalities are presented. Introductory pediatric sonographic techniques and pathology are presented.

**Prerequisite:** RIS 34083.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 34075 ULTRASOUND CLINICAL EDUCATION III 2 Credit Hours**

Provides clinical education and experience at clinical sites to allow students the opportunity to practice skills necessary to obtain high quality sonographic images, to alter protocols based on patients and to evaluate image quality. Content includes first, second and third trimester obstetric sonography and superficial structures sonography.

**Prerequisite:** RIS 34062.

**Corequisite:** RIS 44072.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 2 lab, 12 other

**Grade Mode:** Standard Letter-IP

**RIS 34083 SECTIONAL ANATOMY IN MEDICAL IMAGING 3 Credit Hours**

Presentation of sectional anatomy of the body in the transverse (axial), sagittal and coronal planes as seen in medical images in CT, MRI and diagnostic medical sonography.

**Prerequisite:** BSCI 11010 and BSCI 11020; or BSCI 21010 and BSCI 21020; and radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 34084 COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE IMAGING SECTIONAL ANATOMY I 2 Credit Hours**

Presentation of sectional anatomy of the human body in computed tomography and magnetic resonance imaging. Includes orientation of organs and structures and pathological processes present in images.

**Prerequisite:** Radiologic and imaging sciences major; and special approval.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 34086 COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE IMAGING SECTIONAL ANATOMY II 2 Credit Hours**

Presentation of sectional anatomy of the human body in computed tomography and magnetic resonance imaging. Includes orientation of organs and structures and pathological processes present in images as seen in the extremities.

**Prerequisite:** RIS 34084; and radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 41095 SPECIAL TOPICS IN RADIOLOGIC AND IMAGING SCIENCES 1-3 Credit Hours**

(Repeatable for credit) Courses will consist of various topics in medical imaging designed to enhance learning outcomes.

**Prerequisite:** Radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 1-3 lecture

**Grade Mode:** Standard Letter-IP

**RIS 44000 INTRODUCTION TO RADIATION THERAPY 2 Credit Hours**

An introduction to patient care techniques and clinical procedures for freshman entry students admitted to the RIS major in radiation therapy.

**Prerequisite:** Radiologic and imaging sciences major.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44003 MAGNETIC RESONANCE IMAGING CLINICAL EDUCATION I 2 Credit Hours**

Students observe and become acquainted with MRI equipment and procedures at the clinical education setting and apply knowledge of physics, MRI safety and patient care. Students begin to perform some procedures under direct supervision of MRI technologists. Students attend clinicals 15 hours per week.

**Prerequisite:** Radiologic and imaging sciences major; and special approval.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 5 lab, 10 other

**Grade Mode:** Standard Letter-IP

**RIS 44004 COMPUTED TOMOGRAPHY CLINICAL EDUCATION I 2 Credit Hours**

Provides clinical education and experience at a clinical setting to allow the student the opportunity to become proficient in skills necessary to obtain quality images, to alter protocols based on patient pathology or physical condition, and to identify image quality problems and to make appropriate corrections under direct supervision of a CT Technologist.

**Prerequisite:** Radiologic and imaging sciences major; and special approval.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 5 lab, 10 other

**Grade Mode:** Standard Letter-IP

**RIS 44009 RADIATION THERAPY PRINCIPLES AND PRACTICE II 2 Credit Hours**

Examines the multidisciplinary treatment approaches. Consists of advanced topics in therapy, chemotherapy, immunotherapy, and surgery for combined modalities, for benign conditions, for emergencies and for managing side effects.

**Prerequisite:** RIS 34003.

**Corequisite:** RIS 44053.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44018 RADIATION THERAPY PHYSICS II 3 Credit Hours**

Continuation of the principles of radiation therapy physics and the study of photon beam dosimetry, electron beam dosimetry and treatment planning.

**Prerequisite:** RIS 34008.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter-IP

**RIS 44021 PATIENT MANAGEMENT IN COMPUTED TOMOGRAPHY 2 Credit Hours**

Provides knowledge about care-giving skills for patients undergoing CT exams. Information includes effective communication, problem-solving techniques, patient safety/comfort, patient preparation, monitoring, contrast agents and venipuncture.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 44004.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44028 RADIATION THERAPY RADIOBIOLOGY 3 Credit Hours**

Establishes a foundation in radiation biology for radiation therapy. Cell biology and its response to radiation are reviewed as well as the effect of radiation on pathology and body systems.

**Prerequisite:** RIS 44018.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter-IP

**RIS 44029 RADIATION THERAPY PATHOLOGY I 3 Credit Hours**

General overview of various disease processes with emphasis on cancer types. Includes epidemiology, etiology, symptoms, metastases, histology, tumor grading, staging, detection, screening and diagnosis, treatment, side effects and prognosis of malignancies of the head and neck, central nervous, respiratory, digestive, and female reproductive systems.

**Prerequisite:** RIS 34003 and RIS 34083.

**Corequisite:** RIS 44053.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44030 COMPUTED TOMOGRAPHY IMAGE PRODUCTION I 2 Credit Hours**

Computer fundamentals, operations and applications of CT equipment. Principles of CT system operation and components, image processing and display and image quality.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 44004.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44031 PATIENT MANAGEMENT IN MAGNETIC RESONANCE IMAGING 2 Credit Hours**

Provides information on the role of the MRI technologist in maintaining patient safety and comfort as well as personal and co-worker safety. MR contrast agents and venipuncture will be studied. Includes problem solving with diverse patient types.

**Prerequisite:** Radiologic and imaging sciences major.

**Corequisite:** RIS 44003.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44038 RADIATION THERAPY PHYSICS III 3 Credit Hours**

Covers concepts of radioactivity and brachytherapy. Describes specialized treatment units Discussion of human resource, therapy department budgets and billing, accreditation, certification, professional societies.

**Prerequisite:** RIS 44018.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44041 RADIATION THERAPY QUALITY MANAGEMENT 2 Credit Hours**

Provides overview of quality management programs and continuing quality improvement in radiation therapy. Topics include validity of quality assurance checks, chart checks, image checks, testing on simulators, linear accelerators and brachytherapy sources.

**Prerequisite:** RIS 44018.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter-IP

**RIS 44042 RADIATION THERAPY PATHOLOGY II 3 Credit Hours**

Continuation of Radiation Therapy Pathology I to include epidemiology, etiology, symptoms, metastases, histology, tumor grading, staging, detection, screening and diagnosis, treatment, side effects and prognosis of malignancies of the male reproductive, urinary, endocrine, circulatory, lymphatic, integumentary and musculoskeletal systems as well as pediatric solid malignancies.

**Prerequisite:** RIS 34083 and RIS 44029.

**Corequisite:** RIS 44056.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44043 RADIATION THERAPY PRINCIPLES/PRACTICE III 3 Credit Hours**

Review and testing of major subject areas from all radiation therapy courses to prepare students to successfully pass the national certification exam based on the content specifications from the American Registry of Radiologic Technologists (ARRT).

**Prerequisite:** RIS 44009 and RIS 44018 and RIS 44028 and RIS 44042.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44044 MAGNETIC RESONANCE IMAGING PROCEDURES I 2 Credit Hours**

Provides the imaging techniques related to the body, special clinical applications, coil selection, scan sequences, protocols, positioning criteria, normal and abnormal anatomical and pathologic structures and signal characteristics for all areas of the body except extremities and vascular areas.

**Prerequisite:** Radiologic and imaging science major.

**Corequisite:** RIS 44003.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44045 MAGNETIC RESONANCE IMAGING PROCEDURES II 2 Credit Hours**

Provides the imaging techniques related to the body, special clinical applications, coil selection, scan sequences, protocols, positioning criteria, normal and abnormal anatomical and pathologic structures and signal characteristics for the extremities and vascular areas.

**Prerequisite:** RIS 44044; and radiologic and imaging science major.

**Corequisite:** RIS 44063.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44047 COMPUTED TOMOGRAPHY PROCEDURES I 2 Credit Hours**

Introduction to CT procedures with scanning protocols, positioning and non-contrast anatomy.

**Prerequisite:** Radiologic and imaging science major.

**Corequisite:** RIS 44004.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44048 COMPUTED TOMOGRAPHY PROCEDURES II 2 Credit Hours**

Overview of the procedures presented in CT Procedures I course, anatomy as seen on scans both with and without contrast media, advanced processing, and advanced imaging procedures.

**Prerequisite:** RIS 44047.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44051 MAGNETIC RESONANCE EQUIPMENT AND IMAGE ACQUISITION I 2 Credit Hours**

Develops an understanding of the physics of MR image acquisition and the hardware used. Provides information in the use and manipulation of the instrumentation and technical parameters used in the generation of images. Establishes safety procedures.

**Prerequisite:** Radiologic and imaging science major.

**Corequisite:** RIS 44003.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44052 MAGNETIC RESONANCE EQUIPMENT AND IMAGE ACQUISITION II 2 Credit Hours**

Develops an understanding of MR image acquisition and the hardware used. Provides information in the use and manipulation of the hardware and technical parameters used in the generation of images. Reviews safety special applications such as advanced imaging techniques. Enables the student to maximize MR image quality.

**Prerequisite:** RIS 44051; and radiologic and imaging science major.

**Corequisite:** RIS 44063.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44053 RADIATION THERAPY CLINICAL EDUCATION II 3 Credit Hours**

Continuation of Clinical Education I with emphasis on clinical practice of treatment techniques and planning.

**Prerequisite:** RIS 34030.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 7.5 lab, 15 other

**Grade Mode:** Standard Letter-IP

**RIS 44054 COMPUTED TOMOGRAPHY CLINICAL EDUCATION II 2 Credit Hours**

Provides continued clinical education and experience at a clinical setting to allow the student the opportunity to become proficient in skills necessary to obtain quality images, to alter protocols based on patient pathology or physical condition, and to identify image quality problems and to make appropriate corrections under direct supervision of a CT Technologist. Student attends clinical education setting for 15 hours per week for 15 weeks.

**Prerequisite:** RIS 44004.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 5 lab, 10 other

**Grade Mode:** Standard Letter-IP

**RIS 44058 RADIATION THERAPY CLINICAL EDUCATION III 2 Credit Hours**

Continuation of Clinical Education II with added emphasis on critical thinking, problem solving and clinical competency.

**Prerequisite:** RIS 44053.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 5 lab, 10 other

**Grade Mode:** Standard Letter-IP

**RIS 44062 COMPUTED TOMOGRAPHY IMAGE PRODUCTION II 2 Credit Hours**

A continuation of RIS 44030, the course reviews basic computed tomography components, operations and applications, with advanced studies in post-processing techniques and image quality, while understanding the importance of radiation dose and quality control in computed tomography.

**Prerequisite:** RIS 44030.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44063 MAGNETIC RESONANCE IMAGING CLINICAL EDUCATION II**  
**2 Credit Hours**

Continuation of MRI Clinical Education I. Students apply knowledge of patient care, anatomy and pathology, equipment and image acquisition when observing and performing MRI procedures clinically. Students attend the clinical education setting for 15 hours per week.

**Prerequisite:** RIS 44003.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 5 lab, 10 other

**Grade Mode:** Standard Letter-IP

**RIS 44066 MAGNETIC RESONANCE IMAGING TECHNIQUES** 2 Credit Hours

Integrates concepts of MRI including patient care, imaging procedures, data acquisition and processing as well as principles of image formation for review for the national certification exam in magnetic resonance imaging.

**Prerequisite:** RIS 44063; and special approval.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44067 RADIATION THERAPY CLINICAL EDUCATION IV** 3 Credit Hours

Continuation of Clinical Education III with added emphasis on critical thinking, problem solving and clinical competency.

**Prerequisite:** RIS 44058.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 2 lecture, 7.5 lab, 15 other

**Grade Mode:** Standard Letter-IP

**RIS 44068 COMPUTED TOMOGRAPHY TECHNIQUES** 2 Credit Hours

Students will review knowledge in each content area of the national certification exam in CT including patient management, imaging procedures, and physics and instrumentation.

**Prerequisite:** RIS 44054; and special approval.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44069 COMPUTED TOMOGRAPHY CLINICAL EDUCATION III** 1 Credit Hour

Allows students to advance clinical education skills and experiences at a clinical setting in order to obtain quality images, objectively alter protocols based on patient pathology or physical condition, and to identify image quality problems and to make appropriate corrections under the direct supervision of a CT Technologist. Student will attend a clinical education site for 10 days during the semester.

**Prerequisite:** RIS 44054.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 2.5 lab, 5 other

**Grade Mode:** Standard Letter-IP

**RIS 44072 OBSTETRICS AND GYNECOLOGY SONOGRAPHY II** 3 Credit Hours

Embryonic and fetal development throughout gestation; fetal measurements, normal fetal anatomy and physiology; and abnormal sonographic appearances of the fetus will be covered as well as invasive obstetric procedures and antepartum testing.

**Prerequisite:** RIS 34062.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44073 MAGNETIC RESONANCE IMAGING CLINICAL EDUCATION III**  
**1 Credit Hour**

Continuation of Clinical Education II with student advancing skills and proficiency in performing MRI procedures in the clinical setting and are able to solve problems in a more independent manner. Students will complete 10 clinical days throughout the term.

**Prerequisite:** RIS 44063.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 2.5 lab, 5 other

**Grade Mode:** Standard Letter-IP

**RIS 44074 VASCULAR SONOGRAPHY** 2 Credit Hours

Anatomy, physiology and hemodynamics of the cerebrovascular, abdominal and peripheral vascular systems; normal and abnormal sonographic vascular appearances; Doppler instrumentation and scanning techniques are covered.

**Prerequisite:** Radiologic and imaging science major.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**RIS 44076 ULTRASOUND CLINICAL EDUCATION IV** 4 Credit Hours

Provides clinical education and experience at a clinical site to allow students the opportunity to practice skills necessary to obtain high quality sonographic images, to alter protocols based on patients and to identify image quality problems. Content includes abdominal, pelvic, obstetrical, superficial structure and vascular sonography.

**Prerequisite:** RIS 34075.

**Corequisite:** RIS 44074.

**Schedule Type:** Clinical Laboratory, Laboratory

**Contact Hours:** 4 lab, 24 other

**Grade Mode:** Standard Letter-IP

**RIS 44078 SONOGRAPHIC TECHNIQUES** 3 Credit Hours

Course integrates diagnostic medical sonography concepts in preparation for certification exams.

**Prerequisite:** RIS 34044 and 34052 and 44072.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44083 PATHOPHYSIOLOGY FOR MEDICAL IMAGING** 3 Credit Hours

Provides students with basic information on the causes of disease and the body's response to disease, as well as the medical imaging modalities that will demonstrate them.

**Prerequisite:** RIS 34045 or RIS 44003 or RIS 44004; and radiologic and imaging science major.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**RIS 44084 ULTRASOUND IMAGE EVALUATION** 1 Credit Hour

Presentation of sonographic findings in specific disease processes, with evaluation of image quality and emphasis on diagnostic features of pathologic entities.

**Prerequisite:** Radiologic and imaging science major.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter

**RIS 44088 LEADERSHIP IN MEDICAL IMAGING 1 Credit Hour**

An introduction to the key strategies needed for success in health care leadership positions for both new and seasoned professionals. Includes supervision skills, competent communication, employment law, performance coaching, quality standards, accreditation and regulations, budgeting and finance, project management, leadership skills and health economics.

**Prerequisite:** Special approval.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter

**RIS 44092 COMPUTED TOMOGRAPHY/MRI INTERNSHIP (ELR) 1-3 Credit Hours**

(Repeatable for credit) Supervised work experience in a job related to the student's training. Student works with an organization for a minimum of 45 hours for each hour of credit.

**Prerequisite:** Junior standing.

**Schedule Type:** Practical Experience

**Contact Hours:** 3-9 other

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement

**RIS 44096 INDIVIDUAL INVESTIGATION IN MEDICAL IMAGING DIRECTED READINGS 3 Credit Hours**

(Repeatable for credit) Students are assigned prescribed number of medical imaging journal articles, completes post test and submits a summary paper and online discussions.

**Prerequisite:** Radiologic and imaging science major; and special approval.

**Schedule Type:** Individual Investigation

**Contact Hours:** 3 other

**Grade Mode:** Standard Letter

**RIS 44098 RESEARCH IN MEDICAL IMAGING (ELR) (WIC) 3 Credit Hours**

Fundamental concepts and procedures for systematic collection, analysis critique and application of qualitative and quantitative data in medical imaging.

**Prerequisite:** RIS 34030 or RIS 34045 or RIS 44003 or RIS 44004; and radiologic and imaging science major.

**Schedule Type:** Research

**Contact Hours:** 3 other

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement, Writing Intensive Course