

COMPUTED TOMOGRAPHY

Programs

- Computed Tomography Certificate in Applied Science (<https://catalog.gvltec.edu/school-health-sciences/computed-tomography/computed-tomography-certificate/>)

Courses

RAD 101 Introduction to Radiography (2-0-2)

Offered Fall Semester

Prerequisite: Medical Imaging Sciences Department Head Permission

Co-requisite: RAD 102, RAD 112, RAD 130, RAD 152

This course provides an introduction to radiologic technology with emphasis on orientation to the radiology department, ethics and basic radiation protection.

RAD 102 Radiology Patient Care Procedures (2-1-2)

Offered Fall Semester

Prerequisite: Medical Imaging Sciences Department Head Permission

Co-requisite: RAD 101, RAD 112, RAD 130, RAD 152

This course provides a study of the procedures and techniques used in the care of the diagnostic imaging patient.

RAD 103 Introduction to Computed Tomography (2-0-2)

Offered Fall and Spring Semesters

Prerequisite: Program Coordinator Permission

This course is a study of the technological developments behind computed tomography, an overview of scanner components, terminology, data acquisition, digital imaging, image reconstruction, display and manipulations. Current applications will be explored, including patient screening, contract utilization and administration, contrast reactions and treatment, pediatrics, conscious sedation and monitoring and radiation protection.

RAD 107 Physics for Medical Imaging (3-0-3)

Offered Fall and Spring Semesters

Prerequisite: MAT 109 or higher

This course provides an overview of the mechanical concepts of distance, time, mass, force, energy and power. Topics include mechanics, wave motion, sound and electromagnetism.

RAD 111 Introduction to Radiographic Physics (2-0-2)

Offered Fall Semester

Prerequisite: RAD 175, RAD 205, RAD 230

Co-requisites: RAD 225, RAD 268

This course provides an overview of radiographic mathematical applications and unit conversion, as well as a basic overview of mechanical concepts of distance, time, mass, force, energy and power. Concepts of structure of matter and principles of electromagnetic radiation are included.

RAD 112 Radiographic Imaging Fundamentals (1-3-2)

Offered Fall Semester

Prerequisite: MAT 109 or MAT 110

Co-requisites: RAD 101, RAD 102, RAD 130, RAD 152

This course is an introduction to the study of the fundamental principles and techniques of radiographic imaging. Topics include image quality terms, primary exposure factors, the rationale and methods for primary exposure factor selection and introductory image evaluation techniques.

RAD 114 Radiographic Imaging Fundamentals II (1-3-2)

Offered Spring Semester

Prerequisites: RAD 101, RAD 102, RAD 112, RAD 130, RAD 152

Co-requisites: RAD 136, RAD 160, RAD 201

This course provides advanced instruction in primary and secondary influencing imaging factors and advanced imaging applications.

RAD 120 Principles of Computed Tomography (3-0-3)

Offered Fall and Spring Semesters

Prerequisite: Admission into the Computed Tomography program or Program Coordinator Permission

This course is a study of assurance procedures and radiation dosimetry in computed tomography. Special applications of computer tomography will be explored including interventional procedures, high speed CT scanning, three dimensional CT and multi-planar reformations. A review of special scanner features will also be covered in the course. This course provides the basic understanding of the inter-workings of a CT scanner, along with an in-depth look at the physics behind image generation, quality assurance procedures, radiation dosimeter and image reformation.

RAD 130 Radiographic Procedures I (2-3-3)

Offered Fall Semester

Prerequisite: Acceptance into Phase II of Radiologic Technology program

Co-requisites: RAD 101, RAD 102, RAD 112, RAD 152

This course provides an introduction to radiographic procedures. Positioning of the chest, abdomen and extremities are included.

RAD 135 Computed Tomography Body and Musculoskeletal Protocols (2-0-2)

Offered Fall and Spring Semesters

Prerequisite: Acceptance into the Computed Tomography program

This course provides the basic imaging protocols and patient positioning for CT exams of the abdomen, pelvis and musculoskeletal system. Case studies including anatomy and pathology of the abdomen, pelvis and extremities will be explored.

RAD 136 Radiographic Procedures II (2-3-3)

Offered Spring Semester

Prerequisites: MAT 109, RAD 101, RAD 102, RAD 112, RAD 130, RAD 152

Co-requisites: RAD 114, RAD 160, RAD 201

This course is a study of radiographic procedures for visualization of the structures of the body.

RAD 140 Computed Tomography Clinical Applications I (0-18-6)

Offered Fall and Spring Semesters

Prerequisite: Acceptance into the Computed Tomography program

This course provides the student with clinical experience in basic CT scanning. Students will explore techniques related to patient safety, radiation protection and exam protocols.

RAD 145 Computed Tomography Physics and Instrumentation (3-0-3)

Offered Fall and Spring Semesters

Prerequisite: Admission into the Computed Tomography program or Program Coordinator Permission

This course is a study of Computed Tomography physics and instrumentation. The course provides an overview of technology, application and practice that is unique to the Computed Tomography profession.

RAD 152 Applied Radiography I (0-6-2)

Offered Fall Semester

Co-requisite: RAD 101, RAD 102, RAD 112, RAD 130

This course introduces the clinical environment of the hospital by providing basic use of radiographic equipment and routine radiographic procedures.

RAD 160 Clinical Applications II (0-18-6)

Offered Spring Semester

Prerequisites: RAD 101, RAD 102, RAD 112, RAD 130, RAD 152

Co-requisites: RAD 114, RAD 136, RAD 201

This course is a continuation of practice of hands-on clinical skills in hospital/outpatient environments.

RAD 175 Applied Radiography III (0-15-5)

Offered Summer Semester

Prerequisites: RAD 114, RAD 136, RAD 160, RAD 201

Co-requisites: RAD 205, RAD 230

This course includes clinical education needed for building competence in performing radiographic procedures within the clinical environment.

RAD 201 Radiation Biology (2-0-2)

Offered Spring Semester

Prerequisites: RAD 101, RAD 102, RAD 112, RAD 130, RAD 152

Co-requisites: RAD 114, RAD 136, RAD 160

This course is a study of the principles of radiobiology and protection. It emphasizes procedures that keep radiation exposure to patients, personnel and the population at large to a minimum.

RAD 205 Radiographic Pathology (2-0-2)

Offered Summer Semester

Prerequisites: RAD 114, RAD 136, RAD 160, RAD 201

Co-requisite: RAD 175, RAD 230

This course provides a survey of disease processes significant to the radiographer, including etiology, diagnosis, prognosis and treatment.

RAD 225 Selected Radiographic Topics (2-0-2)

Offered Fall Semester

Prerequisites: RAD 175, RAD 205, RAD 230

Co-requisite: RAD 111, RAD 268

This course is a study of selected areas related to radiography.

RAD 230 Radiographic Procedures III (2-3-3)

Offered Summer Semester

Prerequisites: RAD 114, RAD 136, RAD 160, RAD 201

Co-requisites: RAD 175, RAD 205

This course is a study of special radiographic procedures.

RAD 236 Radiography Seminar II (2-0-2)

Offered Spring Semester

Prerequisites: RAD 111, RAD 225, RAD 268

Co-requisite: RAD 278

This course includes selected areas of radiography that require additional study or application.

RAD 268 Advanced Radiography II (0-24-8)

Offered Fall Semester

Prerequisites: RAD 175, RAD 205, RAD 230

Co-requisite: RAD 111, RAD 225

This course includes routine radiographic examinations, as well as advanced procedures, while continuing to build self-confidence in the clinical atmosphere.

RAD 278 Advanced Radiography III (0-24-8)

Offered Spring Semester

Prerequisites: RAD 111, RAD 225, RAD 268

Co-requisite: RAD 236

This course includes routine and advanced radiographic procedures in the clinical environment.