

# RADIOLOGIC TECHNOLOGY (RTEC), AAS

At Dunwoody College of Technology, the Radiologic Technology program prepares graduates who oversee X-rays, CT scans, and other radiologic procedures. They also manage radiology support staff in hospitals, clinics, and specialized imaging centers. Students learn to work directly with patients and physicians to create images of internal organs, bones, and tissues that are used to diagnose medical problems. Working in both classroom and lab settings, students gain the skills to use the latest in imaging technologies, including digital X-rays and CT scans. They also complete rotations in clinical settings.

Arts & Sciences curriculum supports the technical coursework by enhancing the students' communication, mathematics, and critical thinking skills.

**Credential Earned:** AAS

**Length of Program:** 2 years (4 semesters + 2 summer sessions)

**Classes Offered:** Day

**Available Starts:** Fall Semester; Spring Semester

**Accreditation:** Joint Review Committee on Education in Radiologic Technology (JRCERT)

## Program Outcomes

- Demonstrate knowledge and skills relating to verbal, nonverbal, and written medical communication.
- Analyze patient situations to successfully operate medical imaging systems and perform the examination and procedures.
- Operate medical imaging equipment and accessory devices.
- Anticipate and provide basic patient care and comfort.
- Provide appropriate patient education.
- Practice radiation protection for the patient, self, and others.
- Perform competently a full range of radiologic procedures on children and adults in the following categories: Head/neck, Musculoskeletal, Trauma, Chest and Breast, Bedside, Surgical, and Abdominal/Gastrointestinal/Genitourinary.
- Exercise independent judgment in the technical performance of imaging procedures.
- Determine radiographic exposure factors to obtain diagnostic quality radiographic images with minimum radiation exposures.
- Evaluate medical images for technical quality.
- Understands the safe limits of equipment operation and report malfunctions to the proper authorities.
- Understand basic x-ray production and interactions.
- Demonstrate knowledge of human structure, function, and pathology.
- Demonstrate knowledge and skills relating to quality assurance.
- Demonstrate knowledge and skills relating to medical image processing.
- Demonstrate ethical responsibility, support the professions code of ethics and comply with the profession's scope of practice.

## Degree Requirements

Code	Title	Credits
<b>General Requirements</b>		
BIOL1230	Anatomy	4

BIOL1310	Physiology I	2
BIOL1320	Physiology II	2
BIOL1400	Human Disease	4
Communications		3
Humanities		2
Mathematics		2
Social Sciences		3
<b>Technical Requirements</b>		
RTEC1110	Introduction to Radiography	2
RTEC1120	Patient Care	2
RTEC1130	Radiographic Procedures I	1
RTEC1150	Clinical I	3
RTEC1220	Radiographic Procedures II	1
RTEC1230	Radiographic Procedures III	1
RTEC1240	Clinical II	3
RTEC1250	Clinical III	3
RTEC1140	Medical Terminology	1
RTEC1210	Radiologic Exposure	1
RTEC1310	Radiographic Procedures IV	1
RTEC1320	Clinical IV	3
RTEC2110	Radiologic Science	1
RTEC2121	Advanced Imaging	1
RTEC2130	Clinical V	6
RTEC2220	Radiologic Topics I	1
RTEC2230	Radiologic Topics II	1
RTEC2250	Clinical VI	3
RTEC2260	Clinical VII	3
RTEC2210	Radiation Biology & Protection	1
RTEC2240	Ethics in Healthcare	1
RTEC2310	Radiologic Topics III	1
RTEC2320	Clinical VIII	3
Total Credits		66

## Courses

### Descriptions

#### RTEC1110 | Introduction to Radiography | Lecture (2 Credits)

An overview of radiography and patient care. Orientation to the radiographic profession as a whole. Introduction to the skills required to perform radiologic procedures with an emphasis placed on the production and evaluation of quality radiographs. Topics include: equipment introduction, ethics, medical, and legal considerations; procedures and anatomy related to the chest and abdomen.

#### RTEC1120 | Patient Care | Lecture (2 Credits)

Examine the basic fundamentals required to assess a patient's condition, identify emergency situations, and respond to acute life threatening situations within their scope of practice. Determine the foundations of quality patient care and care management plans, both as an individual and as a vital team player. Emphasis is on fundamental principles, practices, and issues common to radiography.

#### RTEC1130 | Radiographic Procedures I | Lecture (1 Credit)

Develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the upper extremities, the shoulder girdle, and the lower extremities.

**RTEC1150 | Clinical I | Clinical (3 Credits)**

Introduction to the hospital clinical setting; provides an opportunity to participate in or observe radiographic procedures. Topics include: orientation to hospital or clinic areas and procedures, mobile/surgery, and radiography. Participate in and/or observe procedures related to chest and abdomen. Execution of radiographic procedures is conducted under direct and indirect supervision of experienced registered technologists.

**Prerequisite(s):** RTEC1110

**RTEC1220 | Radiographic Procedures II | Lecture (1 Credit)**

Develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the lower extremities, the pelvic girdle, and the spine.

**Prerequisite(s):** RTEC1130

**RTEC1230 | Radiographic Procedures III | Lecture (1 Credit)**

Develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the lumbosacral spine, the bony thorax, the cranium, facial bones, and sinuses; anatomy and procedures of the upper gastrointestinal (GI).

**Prerequisite(s):** RTEC1220

**RTEC1240 | Clinical II | Clinical (3 Credits)**

Continue learning experiences in the clinic or hospital setting. Topics include: equipment utilization, exposure techniques, participation in and/or observation of routine projections of the upper and lower extremities. Execution of radiographic procedures is conducted under direct and indirect supervision of experienced registered technologists.

**RTEC1250 | Clinical III | Clinical (3 Credits)**

Continue learning experiences in the clinic or hospital setting. Focus is on the pelvis, the spine, and common portable radiography procedures. Execution of radiographic procedures is conducted under direct and indirect supervision of experienced registered technologists.

**RTEC1140 | Medical Terminology | Lecture (1 Credit)**

Develop a medical vocabulary. Skills in spelling, pronunciation, and defining medical terms is emphasized.

**RTEC1210 | Radiologic Exposure | Lecture (1 Credit)**

Examine the factors that govern and influence the production of the radiographic image, includes exposure calculations.

**RTEC1310 | Radiographic Procedures IV | Lecture (1 Credit)**

Continue to develop the knowledge required to perform radiographic procedures. Topics include: anatomy and procedures of the lower gastrointestinal (GI), genitourinary (GU), the biliary system, and minor system procedures.

**Prerequisite(s):** RTEC1230

**RTEC1320 | Clinical IV | Clinical (3 Credits)**

Continue hospital or clinic setting work experience. Develop proficiency in executing procedures introduced in Radiographic Procedures. Focus is on bony thorax, cranial bone, facial bone, and sinuses. Examine common fluoroscopic procedures and common radiographic procedures in surgery. Execution of radiographic procedures is conducted under direct and indirect supervision of experienced registered technologists.

**RTEC2110 | Radiologic Science | Lecture (1 Credit)**

Concepts of basic radiographic physics and the basics of x-ray generating equipment.

**Prerequisite(s):** RTEC1210

**RTEC2121 | Advanced Imaging | Lecture (1 Credit)**

Equipment routinely utilized to produce diagnostic images, as well as various recording media and techniques. Topics include: Venipuncture; Image production in CT, MRI, IR, and other imaging modalities; special imaging considerations for geriatric, pediatric, trauma, and mobile imaging procedures; and sectional anatomy of the head, thorax, and abdomen.

**Prerequisite(s):** RTEC1310

**RTEC2130 | Clinical V | Clinical (6 Credits)**

Continues student learning experiences in the clinic or hospital setting; build on skills learned and competencies achieved in the previous semester. Topics include: common fluoroscopic, surgery, and portable radiography procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision of experienced registered technologists.

**RTEC2220 | Radiologic Topics I | Lecture (1 Credit)**

A review of basic knowledge from previous courses to help the student prepare for the national certification examination. Topics include: image analysis, pathology, quality assurance, digital radiography, computers and PACS.

**RTEC2230 | Radiologic Topics II | Lecture (1 Credit)**

Quality assurance, digital imaging, image analysis, resume and career planning; a review of basic knowledge from previous courses to help the student prepare for the national certification examination.

**RTEC2250 | Clinical VI | Clinical (3 Credits)**

Continues student learning experiences in the clinic or hospital setting; build on skills learned and competencies achieved in the previous semester. Topics include: advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; participation in and/or observation of angiographic, interventional and specialty rotations including MRI and CT. Execution of radiographic procedures will be conducted under direct and indirect supervision of experienced registered technologists.

**RTEC2260 | Clinical VII | Clinical (3 Credits)**

Continues student learning experiences in the clinic or hospital setting; build on skills learned and competencies achieved in the previous semester. Topics include: advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; participation in and/or observation of angiographic, interventional and specialty rotations including MRI and CT. Execution of radiographic procedures will be conducted under direct and indirect supervision of experienced registered technologists.

**RTEC2210 | Radiation Biology & Protection | Lecture (1 Credit)**

Radiation detection and measurement, patient protection, personnel protection, absorbed dose equivalencies, agencies and regulations, introduction to radiation biology, cell anatomy, radiation/cell interaction and effects of radiation.

**RTEC2240 | Ethics in Healthcare | Lecture (1 Credit)**

Increase awareness of the many complex issues that face the healthcare industry; critically evaluate an issue taking into consideration all sides and opinions along with supporting reasoning.

**RTEC2310 | Radiologic Topics III | Lecture (1 Credit)**

A review of basic knowledge from previous courses to help the student prepare for the national certification examination. Topics include: image analysis, image production and evaluation; radiographic procedures; anatomy, physiology, pathology, and terminology; equipment operation and quality control; radiation protection; and patient care and education.

**RTEC2320 | Clinical VIII | Clinical (3 Credits)**

Continues student learning experiences in the clinic or hospital setting; build on skills learned and competencies achieved in the previous semester. Includes participation in and/or observation of routine and special radiographic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision of experienced registered technologists.

**BIOL1230 | Anatomy | Lec/Lab (4 Credits)**

Analyze the structure of the human body, molecular, cellular to organism level. Examine cell biology, integumentary, muscular, skeletal, neurological, digestive, respiratory, urinary, cardiovascular, endocrine, lymphatic, and reproductive body systems and the correlation/integration of the various systems to construct the human organism.

**General Education:** Natural Sciences

**BIOL1310 | Physiology I | Lec/Lab (2 Credits)**

Analyze the functioning of the human body, molecular, cellular to organism level. Examine body systems, such as cell biology, muscular, skeletal, neurological, digestive and respiratory and the correlation/integration of the various systems in impacting the functioning of the human organism.

**Prerequisite(s):** BIOL1230

**General Education:** Natural Sciences

**BIOL1320 | Physiology II | Lec/Lab (2 Credits)**

Analyze the functioning of the human body, molecular, cellular to organism level. Examine body systems such as urinary, body defenses, cardiovascular, endocrine, lymphatic, and reproductive and the correlation/integration of the various systems in impacting the functioning of the human organism.

**Prerequisite(s):** BIOL1310

**General Education:** Natural Sciences

**BIOL1400 | Human Disease | Lec/Lab (4 Credits)**

Analysis of the disease conditions affecting the human body, including their pathological origin, signs and symptoms, pathological process, diagnostics, and treatment modalities.

**Prerequisite(s):** BIOL1320

**General Education:** Natural Sciences