

---

---

## Imaging Sciences Certificate in Computed Tomography

---

This program is designed to prepare registered radiology technologist (RT) within a radiology field to advance in their career and be proficient to participate in a different modality within their profession. This certificate will serve as specialty advancement in radiology from an Associates Degree in Radiology to a Certification in Computed Tomography. The program emphasis includes course material specialized in the Computed Tomography modality such as: CT Sectional Anatomy, CT Procedures, CT Physics, and CT instrumentations.

### Admissions requirements:

1. A high school diploma or its equivalency is required for admission into the program;
2. Successful interview with an intake (admissions) counselor; and
3. Successful completion of a ARRT Imaging registry unencumbered license (Registered Technologist, RT(R), (RTT)) license will be verified by admissions director for successful completion of the ARRT Registry) or successful completion of an ARRT recognized program (must be approved by department director).
4. Updated immunization records ( a listing of immunizations can be located in the admissions office)
5. Student must complete a prerequisite orientation to determine if a student will be able to manage education utilizing the online platform. In order to receive credit for attending this orientation (presented on the LMS) a student must complete an assessment exam questioning if they are capable of managing the delivery throughout the duration of the program. This will serve as a determinant if the student will be prepared to start with the distance education platform provided.

The program content is offered through online lecture. 45 Quarter credits will be awarded under the Southwest University CT Certification curriculum.

### Program Delivery: Online

**Definition of Academic Year:** An academic year will consist of 30 instruction weeks and 36 quarter credit hours.

**Full Time Status:** Student's enrollment status will be considered full time if they are enrolled in at least 7.5 credit hours in a six week period.

### Transfer Hours:

**Radiology Advanced Standing Credit (ARRT Completion): 40 semester hrs (60 Quarter Credit Hours)**

<b>Total Lab Hours:</b>	<b>80 Hrs</b>
<b>Total Lecture Hours:</b>	<b>320 Hrs</b>
<b>Total Externship Hours:</b>	<b>270 Hrs</b>
<b>Total Program Hours:</b>	<b>670 Hrs</b>
<b>Total Length of Time:</b>	<b>36 Wks</b>
<b>Total Credit Hours:</b>	<b>45 Qtr credits</b>

### **ISC 100 HUMAN VALUES, ETHICS, AND LAW IN HEALTHCARE**

This course is designed to provide students with the opportunity to explore their personal values system within the context of practice as a health professional. This course will provide an introduction to the elementary concepts of medical law for first line-supervisors and health care practitioners. The course will discuss the effects that HIPAA regulation may have on the imaging industry including information management. This course will provide explanation relative for providing safeguards for maintaining the integrity of all confidential patient medical records.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

Clock hours of individual and small group tutoring: provided to student on an as-needed basis

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 1010 CT INSTRUMENTATION**

This course will provide the student with broad fundamental knowledge about underlying principles, the equipment, associated terminology and a description of important image properties of computed tomography scanning. This will provide a thorough study of the operation of scanner computer components, scan factors, and the application of these factors to clinical procedures. Evaluation of image quality, identification of artifacts through appropriate quality control procedures, and appreciation of radiation dose factors will also be addressed.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.0

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 1021 CT PHYSICS**

This course will discuss computed tomography physics. The course content is designed to impart an understanding of the physical principles and the digital imaging principles involved in computed tomography. Physics topics covered include the characteristics of x-radiation, CT beam attenuation, linear attenuation coefficients, tissue characteristics and Hounsfield numbers application. Data acquisition and manipulation techniques, image reconstruction algorithms will be explained.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 2010 PATIENT CARE AND SAFETY IN CT**

This course will provide instruction pertinent to patient care and safety relative to computed tomography. The course will provide specific instruction for advanced CT procedures including biopsies and ablations. The course will discuss radiation safety and altering parameters for patient dose reduction. The course will provide an in depth look at CT contrast media including patient preparations.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 2021 CT IMAGE QUALITY**

This course will provide the student with broad fundamental knowledge about underlying principles related to CT image quality. This course will provide a thorough study of spatial and contrast resolution, image noise. Evaluation of image quality, identification of artifacts through appropriate quality control procedures, and appreciation of radiation dose factors will also be addressed. Temporal resolution and special cardiac considerations will be discussed.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 2033 CT PROCEDURES**

This course reviews computed tomography examination procedures of the head, neck and thorax including patient care, patient preparation, application procedures, contrast agents, anatomy and physiology, scanning procedures, special procedures, and common pathologies. Indications and contraindications for the study as well as selection of contrast media will be explored.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 3010 CASE STUDIES IN CT: HEAD, NECK, AND THORAX**

This course reviews computed tomography examination procedures of the head, neck and thorax, including patient care, patient preparation, application procedures, contrast agents, anatomy and physiology, scanning procedures, special procedures, and common pathologies. Indications and contraindications for the study as well as selection of contrast media will be explored.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 3021 CT REGISTRY PREPARATION**

This course provides a review of the content used for the advanced level examination for computed tomography according to the content specifications provided by the American Registry of Radiologic Technologists (ARRT). This course will present a review of the content used for the advanced level examination for computed tomography. The content that will be discussed includes computed tomography patient care, physics, and pathology, cross sectional anatomical images, CT instrumentation, and imaging procedures with reference to the content specifications provided by the ARRT.

**Clock hours of lab: 10**

**Clock hours of classroom lecture: 40**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 50**

**Tuition: \$1035.00**

Length of time in wks (Online): 6 wks

Lecture 4.0

Lab 0.5

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 4000 CT CLINICAL I**

This is a clinical course designed for students to apply the knowledge gained from the courses and experiences of the program. The student is expected to begin to demonstrate the necessary skills to become an effective CT technologist in the imaging field. The students will be scheduled for approximately 7.5 hours a day including a 30-minute lunch/break for the duration of 3 days a week for six weeks (totaling 135 clinical hours).

**Clock hours of lab: 0**

**Clock hours of classroom lecture: 0**

**Clock hours of Externship: 135**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 135**

**Tuition: \$1035.00**

Length of time in wks (7.5 hrs per day, 3 days per wk): 6 wks

Lecture 0

Lab 0

Ext

*TOTAL = 4.5 Qtr Hr*

### **ISCT 5000 CT CLINICAL II**

This is the second clinical course where the student is expected to apply knowledge gained from the program. The student is expected to initiate an advanced approach to demonstrate the skills of an effective CT technologist. The students will be scheduled for approximately 7.5 hours a day including a 30-minute lunch/break for the duration of 3 days a week for six weeks (totaling 135 clinical hours).

**Clock hours of lab: 0**

**Clock hours of classroom lecture: 0**

**Clock hours of Externship: 135**

*Clock hours of individual and small group tutoring: provided to student on an as-needed basis*

**Pre-Requisite: N/A**

**Total Clock Hours: 135**

**Tuition: \$1035.00**

Length of time in wks (7.5 hrs per day, 3 days per wk): 6 wks

Lecture 0

Lab 0

Ext

*TOTAL = 4.5 Qtr*