

Imaging

Overview

The imaging program at Folsom Lake College prepares students for the [American Registry of Radiologic Technologists' \(ARRT\)](https://www.arrt.org/) (<https://www.arrt.org/>) certifications in computed tomography (CT), magnetic resonance imaging (MRI) and vascular interventional radiography (VIR). The role of the CT, MRI, or VIR technologist is to perform the technical aspect of routine and complex procedures in the field of radiology that are involved in the detection, diagnosis, and treatment of diseases.

Students will have an opportunity to participate in lectures, simulation training, as well as actual clinical site rotations that are consistent with recommended curriculum material established by the American Registry of Radiologic Technologists.

Upon successful completion of the program, participants will be able to operate CT, MRI, or VIR equipment and perform technical aspects of procedures consistent with protocols in a proficient manner.

Note: To qualify for this course of study, students must already be certified as a radiologic technologist with the State of California.

Career Options

- Certified CT Technologist
- Certified MRI Technologist
- Certified VIR Technologist

Highlights

- Hands-on training in simulation labs
- Clinical site rotations
- Over 375 hours of patient contact experience in a clinical setting

Program Maps

[Public Service, Health, and Education Undecided Major \(/flic/main/doc/instruction/program-maps/Public-service-undecided-major.pdf\)](/flic/main/doc/instruction/program-maps/Public-service-undecided-major.pdf)

[Imaging, Computed Tomography, Certificate of Achievement \(/flic/main/doc/instruction/program-maps/Computed-Tomography-Certificate.pdf\)](/flic/main/doc/instruction/program-maps/Computed-Tomography-Certificate.pdf)

[Imaging, Magnetic Resonance Imaging, Certificate of Achievement \(/flic/main/doc/instruction/program-maps/Magnetic-Resonance-Imaging-Certificate.pdf\)](/flic/main/doc/instruction/program-maps/Magnetic-Resonance-Imaging-Certificate.pdf)

[Imaging, Vascular-Interventional Radiography, Certificate of Achievement \(/flic/main/doc/instruction/program-maps/Vascular-Interventional-Radiography-Certificate.pdf\)](/flic/main/doc/instruction/program-maps/Vascular-Interventional-Radiography-Certificate.pdf)

Dean [Vicky Maryatt \(/about-us/contact-us/faculty-and-staff-directory/vicky-maryatt\)](/about-us/contact-us/faculty-and-staff-directory/vicky-maryatt)

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Certificates of Achievement

Computed Tomography Certificate

For certified Radiologic Technologists, there are a number of advanced forms of imaging that may be pursued. This program is designed for Computed Tomography, commonly called "CT." Successful completion of the program should indicate successful preparation for the American Registry of Radiologic Technologist's CT certification. Students must apply and be accepted into the program. Liability insurance must be purchased by the student as well as the HIPAA training during the program orientation.

Catalog Date: June 1, 2020

Certificate Requirements

COURSE CODE	COURSE TITLE	UNITS
IMAGE 320	Computed Tomography I	1.5
IMAGE 321	Computed Tomography II	3
IMAGE 330	Computed Tomography Lab I	0.5
IMAGE 331	Computed Tomography Lab II	7
Total Units:		12

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Complete the application process for enrollment in the CT program.
- Fulfill all requirements set forth by the Advanced Imaging Modalities Student Guidelines including but not limited to background clearance, physical examination, immunization clearance and drug screening.
- Evidence of current certification as a radiologic technologist in the state of California.
- Students must purchase liability insurance and HIPAA training.

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Please contact the chair of Allied Health at Folsom Lake College for information regarding the application process to the Computed Tomography program. (530)-642-5639

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- provide a complete portfolio of technically proficient CT repetitions to satisfy the ARRT clinical experience requirements.
- exhibit professional and committed delivery of excellent health care.
- use a CT scanner properly while demonstrating proper safety procedures before, during, and after a scan.
- successfully take the ARRT exam in Computed Tomography.

Magnetic Resonance Imaging Certificate

For certified Radiologic Technologists, there are a number of advanced forms of imaging that may be pursued. This certificate is designed for Magnetic Resonance Imaging, commonly called "MRI." This program will prepare the student for the American Registry of Radiologic Technologist's MRI certification. Students must apply and be accepted into the program. Liability insurance must be purchased by the student as well as the HIPAA training during the program orientation.

Catalog Date: June 1, 2020

Certificate Requirements

COURSE CODE	COURSE TITLE	UNITS
IMAGE 340	Magnetic Resonance Imaging I	1.5
IMAGE 341	Magnetic Resonance Imaging II	3
IMAGE 350	Magnetic Resonance Imaging Lab I	0.5
IMAGE 351	Magnetic Resonance Imaging Lab II	7
Total Units:		12

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Complete the application process for enrollment in the MRI program.
- Fulfill all requirements outlined in the Advanced Imaging Modalities Student Guidelines including but not limited to background clearance, physical examination, immunization clearance and drug screening.
- Evidence of current certification as a radiologic technologist in the state of California.
- Students must purchase liability insurance and HIPAA training.

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Please contact the chair of Allied Health at Folsom Lake College for information regarding the application process to the Computed Tomography program. (530)-642-5639

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- provide a complete portfolio of technically proficient MRI repetitions to satisfy the ARRT clinical experience requirements.
- demonstrate competence in the seven mandatory general patient care activities, eight MRI safety requirements, and seven quality control tests.
- exhibit professional and committed delivery of excellent health care.
- pass the ARRT exam in Magnetic Resonance Imaging.

Vascular-Interventional Radiography Certificate

For certified Radiologic Technologists, there are a number of advanced forms of imaging that may be pursued. This program is designed for Vascular-Interventional Radiography, or "IR." Successful completion of the program should indicate successful preparation for the American Registry of Radiologic Technologist's (ARRT) IR certification. Students must apply and be accepted into the program. Liability insurance must be purchased by the student as well as the HIPAA training during the program orientation.

Catalog Date: June 1, 2020

Certificate Requirements

COURSE CODE	COURSE TITLE	UNITS
IMAGE 360	Vascular-Interventional Radiography I	1.5
IMAGE 361	Vascular-Interventional Radiography II	3
IMAGE 370	Vascular-Interventional Radiography Lab I	0.5
IMAGE 371	Vascular-Interventional Radiography Lab II	7
Total Units:		12

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Complete the application process for enrollment in the MRI program.
- Fulfill all requirements set forth by the Advanced Imaging Modalities Student Guidelines including but not limited to background clearance, physical examination, immunization clearance and drug screening.
- Evidence of current certification as a radiologic technologist in the state of California.
- Students must purchase liability insurance and HIPAA training.

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Please contact the chair of Allied Health at Folsom Lake College for information regarding the application process to the Vascular-Interventional Radiography program. (530)-642-5639

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- provide a complete portfolio of technically proficient IR repetitions to satisfy the ARRT clinical experience requirements.
- demonstrate competence in the minimum of 10 procedures as described in the student handbook following the ARRT standards.
- exhibit professional and committed delivery of excellent health care.
- pass the ARRT exam in Vascular-Interventional Radiography.

Imaging (IMAGE) Courses

IMAGE 320 Computed Tomography I

Units:	1.5
Hours:	27 hours LEC
Prerequisite:	None.
Corequisite:	Students will take IMAGE 320 (lecture) and IMAGE 330 (lab) simultaneously.
Enrollment Limitation:	* Acceptance into the CT program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This is the introductory course to the Computed Tomography Program. Content will include an overview of the entire program, hardware and system operation, some study into the history and appearance of CT images, safety, and overview of cross sectional anatomy, and an overview of the requirements for the CT Certification Exam.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify the key content and the historical progression of the Computed Tomography program.
- demonstrate cross-sectional anatomy knowledge necessary to execute technically proficient scans.
- enumerate the safety concerns and basic protocols of the CT technologist in order to enter a live scanning environment.
- demonstrate the communication protocols for successful patient interaction prior to and following the CT scan.

IMAGE 321 Computed Tomography II

Units:	3
Hours:	54 hours LEC
Prerequisite:	IMAGE 320 and 330 with grades of "C" or better
Corequisite:	Students will take IMAGE 321 (lecture) and IMAGE 331 (clinical internship lab) simultaneously.
Enrollment Limitation:	* Acceptance into the Computed Tomography Program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This lecture course will emphasize review of actual Computed Tomography (CT) case studies that have been rendered identity neutral. Reading scans as well as continued training in safety and protocols for the American Registry of Radiologic Technologists (ARRT) technologist will be emphasized. Additionally, there will be an overview of the ARRT standards and requirements for the CT certification exam. This course will be taken in conjunction with IMAGE 331.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- clearly demonstrate the knowledge of the key operating components of the Computed Tomography scanner and their purpose in the scanning process.
- demonstrate patient handling and safety protocols in the Computed Tomography scanning environment.
- identify the primary intravenous procedures and contrast agents.
- list the common Computed Tomography artifacts and their typical causes.

IMAGE 330 Computed Tomography Lab I

Units:	0.5
Hours:	27 hours LAB
Prerequisite:	None.
Corequisite:	Students will take IMAGE 320 (lecture) and IMAGE 330 (lab) simultaneously.
Enrollment Limitation:	* Acceptance into the CT program.
Transferable:	CSU
Catalog Date:	June 1, 2020

The ARRT Computed Tomography Technologist simulation training is a technique for practicing and learning all aspects of performing ARRT CT procedures. Students will use actual CT equipment on dummies that simulate human physiology in order to become proficient enough to enter the live CT environment. This course will be taken in conjunction with IMAGE 320.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate basic operations of CT equipment to a satisfactory level.
- explain the standard protocols and safety procedures for before, during, and after a CT scan.
- list some of the key factors involved with performing a CT scan: patient handling and safety, CT image formation and processing, CT image quality, CT artifacts, and intravenous procedures.

IMAGE 331 Computed Tomography Lab II

Units:	7
Hours:	378 hours LAB
Prerequisite:	IMAGE 320 and 330 with grades of "C" or better
Enrollment Limitation:	* Acceptance into the CT program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This lab course will take place in an actual CT scanning environment off campus. Students will build their portfolio of a minimum of 125 scan repetitions covering at least 25 of the 59 possible procedures. This course may be taken in conjunction with IMAGE 321.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- complete a portfolio of CT scans sufficient to meet ARRT repetition requirements and demonstrate technical proficiency to meet ARRT standards.
- demonstrate professionalism and observance of safety regulations in all interactions with patients and staff.
- demonstrate proper scanning techniques so as to avoid most common artifacts.

IMAGE 340 Magnetic Resonance Imaging I

Units:	1.5
Hours:	27 hours LEC
Prerequisite:	None.
Enrollment Limitation:	Acceptance into the Magnetic Resonance Imaging program.

Transferable: CSU
Catalog Date: June 1, 2020

This course will introduce the student to the key aspects of Magnetic Resonance Imaging (MRI). The fundamental components of the scanner, safety concerns, and basic concepts of the imaging process and cross-sectional anatomy will be introduced. Students will also be provided with basic protocols of an MR scan as well as given information regarding the common types of scans.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify the key hardware components of the MR scanner.
- state the key safety concerns as well as safety protocols that must be followed before, during, and after an MR scan.
- list key advanced techniques that will be practiced in the clinical setting.
- list the considerations for scans done on a variety of different regions of the anatomy including head, extremities, thorax, abdomen, and spine.

IMAGE 341 Magnetic Resonance Imaging II

Units: 3
Hours: 54 hours LEC
Prerequisite: IMAGE 340 and 350 with grades of "C" or better
Enrollment Limitation: Acceptance into the Magnetic Resonance Imaging program.
Transferable: CSU
Catalog Date: June 1, 2020

This lecture course will emphasize review of MR instrumentation, principles, pulse sequences, image acquisition, imaging parameters, MRI safety, and review of actual MRI scans. Training in safety and protocols for the ARRT technologist will be also be emphasized. Additionally, there will be an overview of the ARRT standards and requirements for the MRI certification exam.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate knowledge of the key operating components of the Magnetic Resonance scanner and their purpose in the scanning process.
- explain the basic principles which govern magnetic resonance imaging.
- identify the primary intravenous procedures and contrast agents.
- list the common MRI artifacts and their typical causes.

IMAGE 350 Magnetic Resonance Imaging Lab I

Units: 0.5
Hours: 27 hours LAB
Prerequisite: None.
Enrollment Limitation: Acceptance into the Magnetic Resonance Imaging program.
Transferable: CSU
Catalog Date: June 1, 2020

The ARRT Magnetic Resonance Technologist simulation training is a technique for practicing and learning all aspects of performing ARRT Magnetic Resonance Imaging procedures. Students will use actual MRI equipment in order to become proficient enough to enter the live MRI environment.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate basic operations of MRI equipment to a satisfactory level.
- explain the standard protocols and safety procedures for before, during, and after an MRI scan.
- list some of the key factors involved with performing a MRI scan: patient handling and safety, MRI image formation and processing, MRI image quality, MRI artifacts, and intravenous procedures.

IMAGE 351 Magnetic Resonance Imaging Lab II

Units: 7
Hours: 378 hours LAB
Prerequisite: IMAGE 340 and 350 with grades of "C" or better
Enrollment Limitation: Acceptance into the Magnetic Resonance Imaging program.
Transferable: CSU
Catalog Date: June 1, 2020

This laboratory course is the primary clinical experience for the MRI program. The clinical experience requirements are established by the American Registry of Radiologic Technologists (ARRT). As part of the educational program, students must build their portfolio to a minimum of 125 scan repetitions covering at least 25 of the 53 possible procedures. Required procedures are detailed in the ARRT MRI post-primary certification manual.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- complete a portfolio of MRI scans sufficient to meet ARRT repetition requirements and demonstrate technical proficiency to meet ARRT standards.
- demonstrate professionalism and observance of safety regulations in all interactions with patients and staff.
- demonstrate proper scanning techniques so as to avoid most common artifacts.

IMAGE 360 Vascular-Interventional Radiography I

Units:	1.5
Hours:	27 hours LEC
Prerequisite:	None.
Corequisite:	Students will take IMAGE 360 (lecture) and IMAGE 370 (lab) together.
Enrollment Limitation:	*Acceptance into the Vascular-Interventional Radiography program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This course will introduce the student to the key aspects of Vascular-Interventional Radiography (IR). The fundamental components of the scanner, safety concerns, and basic concepts of the imaging process will be introduced. Students will also be provided with basic protocols of an IR scan as well as given information regarding the common types of scans. This course will be taken in conjunction with IMAGE 370, the introductory lab course in IR.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify the safety protocols before during and after a Vascular-Interventional Radiography scan.
- demonstrate knowledge of the basic equipment and instrumentation related to Vascular-Interventional Radiography.

IMAGE 361 Vascular-Interventional Radiography II

Units:	3
Hours:	54 hours LEC
Prerequisite:	IMAGE 360 and 370 with grades of "C" or better
Corequisite:	Students will take IMAGE 361 (lecture) and IMAGE 371 (clinical lab experience) at the same time.
Enrollment Limitation:	*Acceptance into the Vascular-Interventional Radiography program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This lecture course will emphasize review of actual Vascular-Interventional Radiography cases that have been rendered identity neutral. Reading scans as well as continued training in safety and protocols for the American Registry of Radiologic Technologist (ARRT) will be emphasized. Additionally, there will be an overview of the ARRT standards and requirements for the IR certification exam. This course will be taken in conjunction with IMAGE 371.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- clearly demonstrate the knowledge of the key equipment and instrumentation of vascular-interventional radiography and their purpose in the scanning process.
- demonstrate patient handling and safety protocols in the IR scanning environment.
- list the common IR procedures and can discuss the indications, contraindications, and complications that may arise from these procedures.

IMAGE 370 Vascular-Interventional Radiography Lab I

Units:	0.5
Hours:	27 hours LAB
Prerequisite:	None.
Corequisite:	Students will take IMAGE 360 (lecture) and IMAGE 370 (lab) at the same time.
Enrollment Limitation:	*Acceptance into the Vascular-Interventional Radiography program.
Transferable:	CSU
Catalog Date:	June 1, 2020

The American Registry of Radiologic Technologists (ARRT) Vascular-Interventional Radiography (IR) simulation training is a technique for learning and practicing all aspects of performing ARRT Vascular-Interventional Radiography procedures. Students will use actual IR equipment on phantom dummies that simulate human physiology in order to become proficient enough to enter the live IR environment. This course will be taken in conjunction with IMAGE 360.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate basic operations of IR equipment to a satisfactory level.
- explain the standard protocols and safety procedures for before, during, and after an IR scan.
- list some of the key factors involved with performing an IR scan: patient safety, IR image formation and processing, IR image quality, IR artifacts, and intravenous procedures.

IMAGE 371 Vascular-Interventional Radiography Lab II

Units:	7
Hours:	378 hours LAB
Prerequisite:	IMAGE 370 with a grade of "C" or better
Corequisite:	Students will take IMAGE 361 (lecture) and IMAGE 371 (clinical lab experience) at the same time.
Enrollment Limitation:	*Acceptance into the Vascular-Interventional Radiography program.
Transferable:	CSU
Catalog Date:	June 1, 2020

This lab course is the primary clinical experience for the vascular-interventional radiography program. The clinical experience requirements are established by the American Registry of Radiologic Technologists (ARRT) in their Rules and Regulations. As part of the educational program, candidates must demonstrate competence in the clinical activities identified below. They must be signed off in all General Patient Care Procedures, IR Safety Requirements, Quality Control tests, the minimum of 10 procedures with a total of 200 repetitions across the procedures. These will be detailed in the student handbook for the IR program.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate proficiency in a minimum of ten of the 61 possible procedures on the list of ARRT requirements.
- demonstrate a total of 200 total repetitions across all the procedures chosen.
- appropriately prepare supplies and maintain equipment.
- demonstrate appropriate evaluation of requisition and patient, patient preparation and administration of medications as required.
- demonstrate appropriate patient monitoring during procedures.
- demonstrate appropriate follow-up patient care.
- demonstrate appropriate image processing, including evaluation of images to ensure they demonstrate correct anatomy, radiographic techniques and identification/labeling.

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