

ASSOCIATE OF SCIENCE DEGREE PROGRAM

Radiologic technologists are the medical personnel who perform diagnostic imaging examinations. They are educated in anatomy, patient positioning, examination techniques, equipment protocols, radiation safety, radiation protection and basic patient care. They may specialize in specific imaging modalities such as cardiovascular-interventional radiography, computed tomography, mammography, magnetic resonance imaging, nuclear medicine, diagnostic medical sonography or general radiography.

Radiologic technologists who perform imaging examinations are responsible for accurately positioning patients and ensuring that a quality diagnostic image is produced. They work closely with radiologists, the physicians who interpret medical images to either diagnose or rule out disease or injury. For the images to be interpreted correctly by the radiologist, the imaging examination must be performed properly by a radiologic technologist.

JOB OUTLOOK:

The employment growth of Radiologic Technologists will occur because of a growing and aging population and the increased demand for diagnostic imaging. Healthcare providers are enthusiastic about the clinical benefits of new technologies, like digital imaging technology. However, these technologies remain expensive and the extent to which they are adopted depends largely on cost and reimbursement considerations.

In California, the number of Radiologic Technologists is expected to grow much faster than average growth rate for all occupations. Jobs for Radiologic Technologists are expected to increase by 21.2 percent, or 3,400 jobs between 2008 and 2018.

WORKING CONDITIONS:

Radiologic Technologists generally work in hospitals, clinics, free-standing imaging centers, mobile units, doctors' offices, and medical groups. They typically work a 40-hour week; but because hospitals provide X-ray services around the clock, they may work evening, night, weekend, or on-call hours. Opportunities for part-time and shift work are also available. Technologists may deal with stressful, heavy workloads.

Radiologic Technologists may join the California Society of Radiologic Technologists (CSRT) or the American Society of Radiologic Technologists (ASRT). They are Registered by the American Registry of Radiologic Technologists (ARRT) and Certified by the State of California (CRT)

EARNINGS:

In California radiologic technologists usually earn from \$54,000 to \$81,000. 2011 Labor Market Source: State of California Employment Development Dept.

EMPLOYMENT:

About 5 out of 10 jobs are held in hospital departments, 25% work in physician offices and most of the remainder work in medical and diagnostic laboratories.

PHYSICAL DEMANDS:

Physical stamina is important, because Technologists are on their feet for long periods of time during their work day. Frequent walking and standing and occasional sitting and bending are a typical part of the occupation. The occupation requires power grasping, precision grasping, pushing/pulling, fine manipulation in both hands, reaching or work occasionally above and below shoulder level. The occupation occasionally requires use of both feet to operate foot controls or for repetitive movement. Visual and auditory requirements: continuously demonstrate near and far vision; frequently demonstrate color discrimination, discern speech in quiet/noisy locations, locate origin of sounds, and discern non-speech sounds. Use sense of smell and/or touch to distinguish/identify odors/objects. Frequently lift and carry 10 lbs or less; and occasionally lift and carry over 100 lbs. Carry items up to 200 yards, and up to 3 feet for heaviest item carried (250-lb patient with assistance).

Some may travel in large vans equipped with sophisticated diagnostic equipment to provide services off-site. Even though radiation hazards exist in this occupation, they are minimized by the use of lead aprons, gloves, and other shielding devices, as well as by instruments monitoring exposure to radiation. Technologists wear special badges that monitor their exposure to X-rays.

EDUCATION AND TRAINING:

Formal training leading to an Associate Degree in Radiologic Technology is necessary for entry to this profession. Training is offered at the post secondary level by colleges, universities,

trade schools, vocational-technical institutes, and the Armed Forces. Formal training programs vary in length and in the credential or degree awarded.

CAREER LADDER:

With experience and additional training, Technologists may become specialists who perform CT scanning, angiography, or magnetic resonance imaging. They may also become radiation therapists. Experienced Technologists also may be promoted to supervisor, manager, and ultimately, department administrator or director. Some Technologists become instructors, clinical coordinators or directors in radiologic technology programs.

Labor Market and Occupation Information Source: U.S. Department of Labor, Bureau of Labor Statistics and State of California Employment Development Dept.

ASSOCIATE OF SCIENCE DEGREE RADIOLOGIC TECHNOLOGY

The Radiologic Technology program is sponsored by Arrowhead Regional Medical Center and accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The program is affiliated with Crafton Hills College.

NOTE: Prior to starting this degree the student must show proof of a clear criminal background check.

REQUIRED COURSES:	UNITS
RADIOL 100 Introduction to Radiologic Technology	1.50
RADIOL 103 Radiographic Positioning I	1.00
RADIOL 104 Radiologic Physics I	1.50
RADIOL 105 Radiographic Anatomy/Physiology I	1.00
RADIOL 106 Radiographic Positioning Lab I	0.50
RADIOL 107 Basic Radiologic Medical Techniques	1.50
RADIOL 108 Radiation Protection I	1.50
RADIOL 109 Radiologic Physics II	1.50
RADIOL 110 Radiographic Exposure I	1.00
RADIOL 111 Radiographic Film Critique I	1.00
RADIOL 112 Radiographic Positioning II	1.00
RADIOL 113 Radiographic Anatomy/Physiology II	1.00
RADIOL 114 Radiographic Positioning Lab II	0.25
RADIOL 115 Radiographic Clinic I	11.50
RADIOL 116 Radiographic Exposure II	1.00
RADIOL 117 Radiographic Clinic II	15.00
RADIOL 200 Radiation Protection II	1.50
RADIOL 202 Radiographic Film Critique II	1.00
RADIOL 203 Radiographic Positioning III	1.00
RADIOL 204 Radiographic Anatomy/Physiology III	1.00
RADIOL 205 Radiographic Exposure Lab	0.50
RADIOL 207 Radiographic Fluoroscopic Imaging	1.50
RADIOL 208 Radiography Registry Review and Testing	2.00

RADIOL 209 Radiographic Pathology	1.00
RADIOL 210 Radiographic Positioning IV	1.00
RADIOL 211 Radiographic Anatomy/Physiology IV	1.00
RADIOL 212 Special Procedures in Radiology	1.50
RADIOL 213 Radiographic Clinic III	14.25
RADIOL 214 Radiographic Clinic IV	13.75
TOTAL UNITS	82.75

Lower division requirements for students interested in transferring to a four-year institution in this field may differ from associate degree requirements. Prospective transfer students should complete the general education and lower division requirements of the school to which they will be transferring. See a counselor for details. Information is also available at www.assist.org.

RADIOLOGIC TECHNOLOGY CERTIFICATE

NOTE: Prior to starting this program the student must show proof of a clear criminal background check.

The objective of this certificate is to prepare students to be competent practitioners in the field of radiography. Completion of the certificate will prepare the student to be eligible for the state and national board examinations and for entry-level employment in radiography. The Radiologic Technology program is sponsored by Arrowhead Regional Medical Center and accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The program is affiliated with Crafton Hills College. Program applications, official transcripts, must be filed at ARMC School of Radiologic Technology by April 1st. Application packets are available from October through February of each year. The Radiologic Technology program has special application and acceptance requirements. Please visit www.arrowheadmedcenter.org under education for specific information. In 2015 all students will be required to have an Associate Degree in order to receive a certificate of completion from the Radiologic Technology program.

Admission

The Admissions Committee selects students on the basis of their college grades, satisfactory completion of prerequisite courses, and a personal interview. Interviews are granted to thirty applicants who have completed all prerequisite courses with a minimum 2.5 GPA and have submitted a complete application package with the non-refundable fee. The admissions committee selects 8 students and four alternates.

MINIMUM QUALIFICATIONS:

To be considered for a personal interview the applicants must: Submit a completed application package and fee; provide a copy of their high school diploma or GED; successfully complete the college prerequisites listed below plus GE courses for an AA or AS degree:

PREREQUISITES:	UNITS
*AH 090 Survey of Radiologic Technology	1.50
*AH 101 Medical Terminology	3.00
*ANAT 101 Essentials of Human Anatomy and Physiology	4.00
*ENGL 101 Freshman Composition	4.00
*CIS 101 Introduction to Computer and Information Technology	3.00
*MATH 095 Intermediate Algebra	4.00

REQUIRED FIRST SEMESTER COURSES	UNITS
RADIOL 100 Introduction to Radiologic Technology	1.50
RADIOL 103 Radiographic Positioning I	1.00
RADIOL 104 Radiologic Physics I	1.50
RADIOL 105 Radiographic Anatomy/Physiology I	1.00
RADIOL 106 Radiographic Positioning Lab I	0.50
RADIOL 107 Basic Radiologic Medical Techniques	1.50
RADIOL 110 Radiographic Exposure I	1.00
RADIOL 115 Radiographic Clinic I	11.50

REQUIRED SECOND SEMESTER COURSES	UNITS
RADIOL 108 Radiation Protection I	1.50
RADIOL 109 Radiologic Physics II	1.50
RADIOL 111 Radiographic Film Critique I	1.00
RADIOL 112 Radiographic Positioning II	1.00
RADIOL 113 Radiographic Anatomy/Physiology II	1.00
RADIOL 114 Radiographic Positioning Lab II	0.25
RADIOL 116 Radiographic Exposure II	1.00
RADIOL 117 Radiographic Clinic II	15.00

REQUIRED THIRD SEMESTER COURSES	UNITS
RADIOL 200 Radiation Protection II	1.50
RADIOL 202 Radiographic Film Critique II	1.00
RADIOL 203 Radiographic Positioning III	1.00
RADIOL 204 Radiographic Anatomy/Physiology III	1.00
RADIOL 205 Radiographic Lab	0.50
RADIOL 213 Radiographic Clinic III	14.25

REQUIRED FOURTH SEMESTER COURSES	UNITS
RADIOL 207 Radiographic Fluoroscopic Imaging	1.50
RADIOL 208 Radiography Registry Review & Testing	2.00
RADIOL 209 Radiographic Pathology	1.00
RADIOL 210 Radiographic Positioning IV	1.00
RADIOL 211 Radiographic Anatomy/Physiology IV	1.00
RADIOL 212 Special Procedures in Radiology	1.50
RADIOL 214 Radiographic Clinic IV	13.75
TOTAL UNITS	102.25

*Students may substitute equivalent or advanced level courses.

CONTINUING YOUR EDUCATION

To fulfill the Associate Degree requirements you will need to complete all required general education (G.E.) units in addition to the Radiologic Technology core courses. It is important that you check with a counselor to insure that completion of the G.E. requirements is correct and in appropriate categories.

ASSOCIATE DEGREE REQUIREMENTS

Completion of a minimum of 60 units, completion of the Radiologic Technology program core and non-core courses, and required general education are required for the Associates Degree. All courses must be completed with a "C" grade or higher. Detailed Associate Degree Requirements can be found in the current version of the Crafton Hills College Catalog, or see a Counselor to assist you in course selection.

ADMISSION TO CRAFTON HILLS COLLEGE

Admission to Crafton Hills College is open to those who meet any one of the following requirements: 1. Eighteen years of age or older and can benefit from instruction offered by the college or 2. A high school graduate or 3. Have a G.E.D. (General Education Development) Certificate or 4. Have a California High School Proficiency Certificate or 5. Out-of-state residents and citizens of other countries here on student visas may also attend Crafton Hills College, subject to regulations that can be obtained from the Admissions & Records Office. These students will be required to pay non-resident tuition fees. Current high school students may be admitted under special circumstances. Please see the current version of the Crafton Hills College Catalog for eligibility requirements.

Every new student participates in the assessment process. The assessment is designed to measure current skills and is used to determine appropriate placement in English and Math. For additional information you may contact the Assessment Center at (909) 389-3361 or e-mail testcenter@craftonhills.edu. After completing the assessment, it is recommended that students meet with a counselor to discuss appropriate course work in accordance with the student's goals.

Crafton Hills College is accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, 10 Commercial Boulevard, Suite 204, Novato, CA 94949, (415) 506-0234, an institutional accrediting body recognized by the Council for Higher Education Accreditation and the U.S. Department of Education.

ADDITIONAL PROGRAM INFORMATION

ARMC SCHOOL OF RADIOLOGIC TECHNOLOGY

Program Mission Statement

The mission of the Arrowhead Regional Medical Center School of Radiologic Technology is to provide the educational environment necessary to prepare graduates who are competent in diagnostic radiography and possess the professional ethics and practices associated with quality patient care.

Program Goals and Student Learning Outcomes

Fulfillment of the program's mission is assessed by the degree the program achieves the following Goals and Student Learning Outcomes, (SLO's):

GOAL #1 - The program will graduate students who are clinically competent.

SLO: Students will demonstrate proper positioning skills, radiation protection practices, set appropriate technical factors, and provide for the comfort and care of the patients.

GOAL #2 - Graduate students with problem solving and critical thinking skills.

SLO: Students will modify routine imaging parameters based on patient's conditions, demonstrate ability to critique images for quality, and utilize these skills in their future employment.

GOAL #3 – Graduate students who demonstrate effective communication skills.

SLO: Students will demonstrate oral and written communication skills.

GOAL #4 - Graduate students who display professional values and good ethical behavior and strive for continued personal and professional growth.

SLO: Students will display professional behavior in the clinical setting, choose to observe other modalities during their elective rotation, and realize the value of professional advancement.

Accreditation

This Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). Any questions concerning the program accreditation status or program effectiveness data may be directed to the JRCERT at:

20 North Wacker Drive, Suite 2850
Chicago, Illinois 60606-3182
Tel: (312) 704-5300
E-mail: mail@jrcert.org
Web Site: <http://www.jrcert.org>

Sponsorship / Affiliation

The County of San Bernardino sponsors this program at **Arrowhead Regional Medical Center:** 400 North Pepper Avenue, Colton, California 92324. The school is affiliated with **Crafton Hills College:** 1171 Sand Canyon Road, Yucaipa, CA 92399.

Registry/Certification

Arrowhead Regional Medical Center School of Radiologic Technology offers a complete Hospital Based Certificate program in Radiologic Technology. All professional courses are at Arrowhead Regional Medical Center. Students also enroll in Crafton Hills College and obtain an Associate of Science Degree. It is mandatory for all Rad. Tech. students to enroll in the Radiography classes at Crafton Hills College. Students, who complete the Program curriculum, including the clinical education requirements, will receive a Certificate of Completion from ARMC School of Radiologic Technology.

Each graduate will be eligible to take exams prepared by the American Registry of Radiologic Technologists (ARRT) including Fluoroscopy, and Mammography (optional). Effective in 2015, graduates must have attained an Associate degree minimum to be eligible for the initial ARRT credentialing examination.

Minimum Qualifications

To be considered for a personal interview, the applicant shall:

- 1) submit a completed application package and \$50.00 fee
- 2) provide **official** College Transcripts
- 3) **complete the college courses listed below with minimum 2.5 GPA plus complete all General Education Courses for AA or AS degree prior to the April 1st deadline:**

- English Composition: ENGL 101 or equivalent
- Computer Literacy: CI&S 101 or equivalent
- Intermediate Algebra Math 095
- General Anatomy and Physiology: 101 or equivalent
- Medical Terminology: AH 101 or equivalent
- Survey of Radiologic Technology: AH 090 (offered at Crafton Hills College)

Higher level classes, than the ones listed above, may be accepted in lieu of these specific courses. However, we strongly suggest that if any pre-requisite courses were completed at a college other than Crafton Hills, you contact the counseling department to insure equivalency. All courses must meet Crafton Hill's requirement or they will not be accepted.
Counseling office: (909) 389-3366.

Effective January 1, 2013 the prerequisites are expanded to include a minimum Associates degree or completion of General Education Courses leading to an Associates degree.

This change is necessary because Radiologic Technology students graduating in the year 2015 must have a minimum of an Associates degree in order to sit for the American Registry of Radiologic Technologists (ARRT) board examination.

Note: The completion of a California Limited Permit program for Radiologic Technician does not fulfill this program prerequisite course requirement.

Technical Standards/Physical Demands

During the course of the program the student will be exposed to electricity, infectious materials and radiation. The student will be instructed on the use of specialized protective equipment and clothing. The student must be prepared for the following physical demands of the clinical setting:

Frequent walking and standing. **Occasional** sitting and bending. Requires power grasping, precision grasping, pushing/pulling, and fine manipulation in both hands. Reach or work occasionally above and below shoulder level. Occasionally requires use of both feet to operate foot controls or for repetitive movement. **Visual and auditory requirements:** continuously demonstrate near and far vision; frequently demonstrate color discrimination, discern speech in quiet/noisy locations, locate origin of sounds, and discern non-speech sounds. Use sense of smell and/or touch to distinguish/identify odors/objects. **Frequently lift** and carry 10 lbs or less; and occasionally lift and carry over 100 lbs. Carry items up to 200 yards, and up to 3 feet for heaviest item carried (250-lb patient with assistance).

Admission to Program

A student radiographer must be a mature, dependable person who is “people-oriented” and genuinely interested in helping the sick and disabled. The Program selects students whose qualifications indicate the greatest potential for professional and personal development. Eight students and four alternates are selected each year by the admissions committee.

Selection is based on pre-requisite course grades and personal interview. Applications and transcripts will be presented to the admissions committee who will select those whom they wish to interview. Each applicant will be notified of their status via e-mail by the 2nd week of April. Interviews are scheduled during the 3rd and 4th week of April. Prior to the interview, each applicant will have 10 minutes to review the interview questions. Each applicant is asked the same questions and is evaluated by the committee. Applicants are provided an opportunity to ask questions.

After the interviews have been completed, the new class is selected based on the following criteria:

- Response to interview questions – 80%
- Interview appearance 5%
- Re-applicant 5%
- Previous Alternate 10%

Eight students are accepted and four alternates.

All applicants are notified via e-mail attached letter of their interview results.

The committee includes the ARMC’s Medical Advisor, Program Director, Clinical Coordinator, Radiology Manager, a faculty member and the Dean of Program Development or designated representative of Crafton Hills College.

Applicants who are accepted into the program **are required** to pass a physical examination that is performed by the San Bernardino County Health and Wellness Center. A **drug-screening test** is performed in conjunction with the physical examination. The student will be fingerprinted and must **pass a criminal background check. Failure to pass the physical and/or the background check may result in disqualification.**

Note: Students who complete the program and apply to The American Registry of Radiologic Technologists must supply information to the ARRT regarding any criminal history. Eligibility may be checked prior to admission to the radiologic technology program or to ARRT testing by submitting a “PRE-APPLICATION REVIEW OF ELIGIBILITY.” Further inquiries may be submitted directly to the ARRT at:

The American Registry of Radiologic Technologists
1255 Northland Drive
St. Paul, Minnesota 55120-1155
Phone: (651) 687-0048

www.arrt.org Admission to Program

Advanced Placement

All students start at the **same level** (Junior). There are **no** provisions for **advance placement** in the Radiography Program nor does this Program accept transfer students from other Programs.

Equal Opportunity Policy

The Radiologic Technology Program at Arrowhead Regional Medical Center is committed to a policy of nondiscrimination on the basis of race, religion, sex, age, national origin or disability.

Schedule

During the 23 months, the students receive didactic and supervised clinical training. The clinical component of the Radiologic Technology Program consists of practical demonstration in the use of radiographic equipment and an opportunity to participate in actual radiographic procedures under direct and indirect supervision. **The Classroom and Clinical schedule** is full time, **forty hours per week** at Arrowhead Regional Medical Center. The hours vary according to the clinical rotation schedule. Day-shift rotations are predominantly from 8:00 am - 4:30 p.m. and evening **rotations** from 3:00p.m.-11:00 p.m. Classroom time comprises approximately eight to twelve hours per week with the remaining time apportioned to obtaining clinical experience. All schedules are posted at least one semester in advance.

Uniforms

Junior and senior students wear a specific color of scrub-style uniform. Students will be notified in advance as to what color of scrubs to purchase prior to the start of the program.

School Day/School Week

The school day for all students consists of up to five (5) days per week and eight (8) hours per day. A thirty minute lunch period is provided daily, with two 15 minute breaks.

Calendar / Holidays

The following are recognized as legal holidays:

- January 1st Holiday
- Third Monday in January
- Third Monday in February
- Last Monday in May
- July 4th
- First Monday in September
- Second Monday in October
- November 11th
- Thanksgiving Day
- Day after Thanksgiving
- December 24th
- December 25th
- December 31st

Grading scale:

In accordance with the Program grading policy, a minimum of 75% must be obtained to remain in the program. Any grade below 75% results in an “F” and failure from the course. Grading breaks down as follows:

- 100-90% = A
- 89-80% = B
- 79-75% = C
- Below 75%= F

Curriculum

The Program consists of study in the following areas:

Introduction to Radiography, Medical Ethics and Law, Methods of Patient Care, Human Structure and Function, Radiographic Procedures and Positioning, Radiographic Exposure, Imaging Equipment, Radiographic Film Processing, Digital Imaging, Picture Archiving & Communication System (PACS), Evaluation of Radiographic Images, Radiation Physics, Radiation Protection and Biology, Radiographic Pathology, Quality Assurance, Fluoroscopy, Venipuncture, Pharmacology, Introduction to Computed Tomography, Contrast Administration and Clinical Education. There is also an optional course in Mammography to prepare for CA state certification.

Pregnancy Policy

Protection of the developing child from ionizing radiation is an important and well established practice. International and national advisory organizations all recommend that the radiation dose to a developing child, due to the mother’s work-related exposure, be maintained as low as is reasonably achievable. **For any additional information regarding our pregnancy policies, contact the Program Director or go to www.arrowheadmedcenter.org under education.**

Crafton Hills College

Once accepted into the Program, students register and receive college credit through Crafton Hills College for their Radiologic Technology courses, leading towards an Associate of Science degree. The affiliation with CHC provides the opportunity for an AS degree, access to financial aid, and all other student services as listed in the college bulletin. Students shall adhere to the policies of Arrowhead Regional Medical Center.

Orientation

The first week of the program is dedicated to orientation of the student to the County of San Bernardino, Arrowhead Regional Medical Center, the Medical Imaging Department, and ARMC School of Radiologic Technology. A Student Policy Manual will be distributed and reviewed during orientation.

Library

Students have access to the Medical Center Library that contains books and journals on Radiology as well as other medical information. The library provides personal computers with Internet access.

The professional curriculum consists of 82.75 units. As of Fall 2013 the enrollment fee for Crafton Hills College is \$46.00 per unit. Please check the Crafton Hills College website (www.craftonhills.edu) for current fee information. Students should expect to purchase textbooks, uniforms, school supplies, and malpractice insurance. The total program cost including tuition is approximately \$5,500 for California residents. Cost is subject to change.

Financial Aid

Financial aid is available to qualified students. Information pertaining to financial aid may be obtained from CHC Financial Aid Office.

Crafton Hills College Financial Aid Office:
11711 Sand Canyon Road
Yucaipa, CA 92399
(909) 389-3223

Graduation Requirements for Certificate Program

Requirements for graduation include completion of all courses in the curriculum with a minimum grade of **75% in all professional courses of ARMC** as well as successful completion of all clinical hours, rotations, and competency evaluations. **All ARMC graduation requirements must be completed prior to the June graduation date (first Wednesday of June).**

Reinstatement and Graduation

Due to pregnancy or other unforeseen emergency or special circumstance, a student may request a leave of absence for a maximum of one year. The Advisory Committee will review each request. The student may graduate upon reinstatement and successful completion of all course requirements.

Non-California Residents

Non-California residents should contact Crafton Hills College for residency requirements.

Program Data for last 5 years (2008-2012):

The Program completion rate average for last 5 years	96%
5-year average Board Exam (ARRT) 1st Attempt Pass Rate	90%
5-year average job placement rate (within six months of graduation)	83%

NOTE: Information contained in this brochure is subject to change without notice.

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