



COLORADO MESA
UNIVERSITY

Department of Health Sciences

BS in Radiologic Sciences

(Bachelor of Science Degree)

Information Packet



Bachelor of Science in Radiologic Sciences

About the Profession

The registered radiologic technologist plays an important role on the medical team by providing quality radiographic images for a physician or radiologist (a physician who specialized in interpretation of diagnostic radiologic images). As a medical professional, the radiologic technologist functions to aid in the diagnosis of various abnormalities.

Responsibilities of the radiologic technologist include adjusting radiographic equipment for specific examinations, placing the patient into the correct position, making the required exposure, and processing images. In some cases, mobile radiographic equipment must be used in the emergency room, in surgery, or at the patient's bedside. Responsibilities may also include performing quality assurance procedures, ordering supplies, and maintaining radiographic equipment.

The major responsibility of the radiologic technologist, however, is compassionate care of the patient. In a profession driven by technical advances, caring for the needs of the patient remains the primary objective. Compassionate care includes proficiency in communication, respecting individual rights, and maintaining safety.

Employment Opportunities

Varieties of career opportunities are available as a radiologic technologist. A registered radiologic technologist is qualified to work in hospitals, physician's offices, and public health facilities. Radiologic technology is a dynamic career with new applications and techniques appearing regularly. This field affords many opportunities for professional growth.

Beyond entry-level preparation, a Bachelor of Science in Radiologic Sciences (BSRS) provides opportunity for advancement into imaging leadership and management roles. The degree further serves as a stepping-stone for advancement into magnetic resonance imaging, vascular interventional imaging, cardiac interventional imaging, computed tomography, mammography, sonography, radiation oncology, radiologist assistant, physician assistant, and education.

About the Program

Preparation for the Bachelor of Science in Radiologic Sciences Program generally includes four semesters of essential learning (general education) and foundation courses. Following acceptance into the program, there are an additional five semesters. Completion of all essential learning courses prior to submission of an application or beginning the program is not required. However, candidates are strongly encouraged to complete all essential learning courses prior to beginning the program, as it does considerably decrease the semester credit hour load necessary to graduate. It is necessary for candidates to complete foundation prerequisite courses prior to beginning the program. Candidates can apply to the program before the foundation prerequisite courses are completed. However, if admitted into the program, acceptance is contingent upon successful completion of foundation courses prior to entering the program for the fall semester.

The program delivers five didactic courses in an online format, with the remaining courses face-to-face on the Colorado Mesa University campus. Clinical experience includes rotations at several clinical facilities throughout Grand Junction and western Colorado. At some point during the program, a seven to eight week rotation in Delta, Montrose, Craig, Rifle, Glenwood Springs, or Rangely is required. Additionally, the structure of the program requires students to attend a seven week summer session between the third and fourth semester of the program.

Operational hours of the program are Monday through Friday, 5:00 am to 7:00 pm, with the exception of two designated clinical rotations that either begin earlier or extend later. Total contact hours for the program do not exceed 40 hours per week. The program requires students to complete a background check and drug screen, acquire personal liability insurance, and maintain CPR certification.

**Department of Health Sciences, Colorado Mesa University
Program Effectiveness Data for AAS and BS in Radiologic Sciences**

The BSRS replaced the AAS Program in fall 2017. The following program effectiveness data reflects both programs.

Credentialing Examination Rate

Year	Program	Number of Graduates Taking Examination	Number of Graduates Passing on First Attempt	Percent Passing
2017	AAS	17	In progress	-----
2016	AAS	18	18	100%
2015	AAS	17	17	100%
2014	AAS	15	15	100%
2013	AAS	19	18	95%
2012	AAS	18	18	100%
<i>Total</i>		87	86	

Benchmark: not less than 75% at first attempt

Five-year average credentialing examination pass rate (2012-2016) = 98.8%

Graduate Job Placement Rate

Program	Number of Graduates Actively Seeking Employment	Number of Graduates Employed Within 12 Months	Percent of Graduates Employed Within 12 Months	
2016	AAS	17	16	94%
2015	AAS	16	14	88%
2014	AAS	11	10	91%
2013	AAS	15	12	80%
2012	AAS	15	12	80%
<i>Total</i>		74	64	

As defined by the JRCERT those graduates *not actively seeking employment* means the graduate fails to communicate with program official regarding employment status after multiple attempts, or is unwilling to seek employment that requires relocation, or unwilling to accept employment due to salary or hours, or on active military duty, or continuing education.

Benchmark: Five-year average not less than 75% within twelve months of graduation

Five-year average job placement rate at 12 months = 86.4%

Annual Program Completion Rate*

Year	Program	Students Enrolled in Cohort	Graduates from Cohort	Percent Graduates from Cohort
2017-2019	BSRS	21	-----	-----
2015-2017	AAS	18	17	94 %
2014-2016	AAS	18	18	100%
2013-2015	AAS	18	17	94 %
2012-2014	AAS	18	15	83 %
2011-2013	AAS	19	19	100 %
<i>Total</i>		91	86	

*Annual benchmark for the program completion rate is 150% of program length

Benchmark: not less than 80%

Five-year average program completion rate = 94.5%

Program effectiveness data also available from the Joint Review committee on Education in Radiologic Technology (JRCERT) at www.jrcert.org

Affiliated Program Clinical Sites

Colorado Canyons Hospital and Medical Center, Fruita	Montrose Memorial Hospital, Montrose
Community Hospital, Grand Junction	Rangely District Hospital, Rangely
Delta County Memorial Hospital, Delta	Rocky Mountain Orthopaedics, Grand Junction
Glenwood Medical Associates, Glenwood Springs	St. Mary's Hospital and Medical Center, Grand Junction
Grand River Medical Center, Rifle	Valley View Hospital, Glenwood Springs
Kokopelli Clinic, Fruita	Veterans Administration Medical Center, Grand Junction
Memorial Hospital at Craig, Craig	Western Orthopedics, Grand Junction

Program Accreditation and Degree

The Bachelor of Science in Radiologic Sciences Program is pending approval by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The four-year program provides educational experiences to prepare a professional radiologic technologist to practice in a variety of health care settings. The program integrates theory, practice, and science with a broad liberal arts education. Upon successful completion of the program, the student receives a Bachelor of Science degree. Following successful completion of the BSRS Program and after meeting ethics and examination requirements, the graduate is eligible to sit for the national certification examination administered by the American Registry of Radiologic Technologists. A passing score on this examination results in the granting of a certificate of registration that allows the privilege to use the title "Registered Technologist" and to use the abbreviation R.T. following the graduate's name.

Radiologic Sciences Program Mission Statement

In alignment with the mission of Colorado Mesa University, the mission of the Radiologic Sciences Program is to offer baccalaureate level professional education and professional certifications.

Bachelor of Science in Radiologic Sciences Goals and Student Learning Outcomes

Fulfillment of the program's mission is assessed by the degree to which the program achieves the following goals:

Goal: Students will be clinically competent.

Student Learning Outcome

Relate ethical principles to real-life problems in the radiologic sciences (specialized knowledge).

Combine academic theory with practitioner experience and skills (applied learning).

Develop critical thinking and problem solving skills that demonstrate a professional level of expertise in the radiologic sciences (critical thinking).

Goal: Students will communicate effectively.

Student Learning Outcome

Assess oral communication techniques used in professional practice (communication).

Demonstrate written communication skills (communication).

Goal: Students will develop critical thinking skills that are aligned with the standards of the profession.

Student Learning Outcome

Demonstrate skills to reason and solve quantitative problems in the radiologic sciences (quantitative fluency).

Goal: Students will model professionalism.

Student Learning Outcome

Promote value-based behaviors for professional practice (critical thinking).

Counseling, Housing, Financial Aid, and Scholarships

Please refer to the Colorado Mesa University website <http://www.coloradomesa.edu> or the current Colorado Mesa University catalog for information concerning career counseling, housing, financial aid, and scholarships.

More Information

For more information about the program, course requirements, and course descriptions please visit Colorado Mesa's website at <http://www.coloradomesa.edu/health-sciences> or call 970-248-1398.

Graduation Requirements for Bachelor of Science in Radiologic Sciences

	Credit Hours	Contact Hours
Essential Learning Requirements (31 semester hours)		
English Composition 111 and 112	6	90
Math 113 (3 credits apply to Essential Learning requirements and 1 credit applies to elective credit)	3	45
Humanities	3	45
Social and Behavioral Sciences (Two courses: PSYC 150 –General Psychology and PSYC 233 Human Growth and Development recommended)	6	90
Natural Science (Two courses and one course must include a lab)	7	120
History	3	45
Fine Arts	3	45
Other Lower-Division Requirements (6 semester hours)		
KINE 100 Health and Wellness	1	15
KINA Physical Activity	1	15
ESSL 290 Maverick Milestone	3	45
ESSL 200 Essential Speech	1	15
Foundation Prerequisite Courses (15 or 16 semester credits)		
Anatomy and Physiology Lecture BIOL 209	3	45
Anatomy and Physiology Lab BIOL 209L	1	30
Anatomy and Physiology Lecture BIOL 210	3	45
Anatomy and Physiology Lab BIOL 210L	1	30
Pathophysiology BIOL 241	4	60
Probability and Statistics STAT 200 or Statistics for the Social and Behavioral Sciences STATS 215	3 or 4	45 or 60
Radiologic Technology Core Courses* (65 semester credits)		
Didactic	41	615
Laboratory	5	150
Clinical	19	855
General Electives (1 credit from MATH 113 and all college level courses appearing on your final transcript, that will bring your total hours to 120)		
	2 or 3	30 or 45
Total Hours	120	2490

Conversion

- Didactic (15 hours/1 credit hour)
- Laboratory (30 hours/1 credit hour)
- Clinical (45 hours/1 credit hour)

*Total radiologic technology core course contact hours will not exceed 40 hours per week.

Suggested Course Sequencing for Bachelor Science in Radiologic Sciences

This is a recommended sequence of course work. Certain courses may have prerequisites or may only be offered during the fall or spring semesters. It is the student's responsibility to meet with the assigned advisor and check the two-year course matrix on the Colorado Mesa website for course availability.

Freshman Year, Fall Semester: 14 credits

- ENGL 111 - English Composition (3)
- PSYC 150 - General Psychology (3)
- KINE 100 - Health and Wellness (1)
- Essential Learning - History (3)
- BIOL 101 - General Human Biology (3) and BIOL 101L - General Human Biology Laboratory (1)

Freshman Year, Spring Semester: 14 credits

- ENGL 112 - English Composition (3)
- MATH 113 - College Algebra (4)
- PSYC 233 - Human Growth and Development (3)
- BIOL 209 - Human Anatomy and Physiology I (3) and BIOL 209L - Human Anatomy and Physiology I Laboratory (1)

Sophomore Year, Fall Semester: 14 credits

- Essential Learning - Fine Arts (3)
- Essential Learning - Humanities (3)
- Essential Learning - Natural Science (3)
- BIOL 210 - Human Anatomy and Physiology II (3) and BIOL 210L - Human Anatomy and Physiology II Laboratory (1)
- KINA Activity (1)

Sophomore Year, Spring Semester: 13 credits

- BIOL 241 - Pathophysiology (4)
- ESSL 290 - Maverick Milestone (3)
- ESSL 200 - Essential Speech (1)
- STAT 200 - Probability and Statistics (3) or STAT 215 - Statistics for the Social and Behavioral Sciences (4)
- Elective (1-2)

Junior Year, Fall Semester: 13 credits

- RADS 320 - Intro to Rad. Tech and Patient Care (3) and RADS 320L - Intro to Rad. Tech and Patient Care Laboratory (1)
- RADS 321 - Radiographic Anatomy/Positioning (2) and RADS 321L - Radiographic Anatomy/ Positioning Laboratory (1)
- RADS 322 - Principles of Radiographic Exposure (2) and RADS 322L - Principles of Radiographic Exposure Laboratory (1)
- RADS 323 - Digital Imaging (2)
- RADS 329 - Radiographic Clinical Experience I (1)

Junior Year, Spring Semester: 16 credits

- RADS 331 - Radiographic Anatomy/ Positioning II (2) and RADS 331L - Radiographic Anatomy/ Positioning II Lab (1)
- RADS 332 - Specialized Imaging (2)
- RADS 333 - Imaging Equipment and QA (2) and RADS 333L - Imaging Equipment & QA Laboratory (1)
- RADS 334 - Image Analysis I (2)
- RADS 335 - Radiation Biology & Protection (2)
- RADS 339 - Radiographic Clinical Experience II (4)

Junior Year, Summer Semester: 6 credits

- RADS 449 - Radiographic Clinical Experience III (6) [note 12 credits required for fulltime status]

Senior Year, Fall Semester: 16 credits

- RADS 354 - Image Analysis II (2)
- RADS 451 - Imaging Pathology (3)
- RADS 452 - Sectional Anatomy (3) Online
- RADS 453 - Advanced Patient Care (3) Online
- RADS 459 - Radiographic Clinical Experience IV (5)

Senior Year, Spring Semester: 14 credits

- RADS 461 - Principles of Computed Tomography (2) Online
- RADS 462 - Leadership and Management (3) Online
- RADS 463 - Information Literacy in Radiologic Science (3) Online
- RADS 464 - Senior Capstone (3)
- RADS 469 - Radiographic Clinical Experience V (3)

**Bachelor of Science in Radiologic Sciences
Department of Health Sciences, Colorado Mesa University**

Projected BSRS Program Costs

This list serves as an estimate to assist students in budgeting. The costs are approximate and are subject to change without notice.

**Tuition and Fees http://www.coloradomesa.edu/student-accounts/expenses.html		
Essential learning and foundation courses (four semesters)		15,390.65
Program courses only (five semesters)		18,188.95
Housing and Meal Plans http://www.coloradomesa.edu/residence-life/index.html		Variable
Miscellaneous		
Health insurance		Variable
Criminal background screen (prior to beginning program)		60.00
Drug screen		36.00
Liability insurance (annually)		40.00
CPR		32.00
Immunizations and Documentation (cost estimated without insurance)		
TST-2 part initially (TB skin test) testing; one test annually	50.00 to 60.00/test	
Tetanus, diphtheria, and pertussis (TDaP) vaccination	30.00-67.00	
Influenza (flu) vaccination (annually)	0-30.00	
Varicella (chicken pox) vaccination	154.00-159.00	
Measles, mumps, and rubella vaccination	67.00-110/00	
Hepatitis B immunizations (\$60-120 x 3)	145.00-300.00	
Meningococcal (suggested) immunization	90.00-135.00	
Books CMU Bookstore http://www.themaverickstore.com (based on new book purchase)		
First (fall) semester (bundle)		800.00
Second (spring) semester		60.00
Third (summer) semester		0
Fourth (fall) semester		280.00
Fifth (spring) semester		450.00
Uniforms		
Uniform whites (\$45 x 2 recommended)		90.00
Lab coat (optional)		40.00
Shoes		70.00
Incidentals		
Name tag		Provided by program
Dosimeter (radiation monitor)		Provided by program
Program identification patches (\$5)	2	Provided by program
Lead anatomical side markers		30.00

** Tuition and fees listed are in state and assume COF eligibility.

Admission to Colorado Mesa University

The program requires applicants to have CMU admittance prior to submission of the separate BSRS application. Online applications are available at www.coloradomesa.edu/admissions

Admission requirements may change from year to year. It is the applicant's responsibility to obtain the current admission requirements. If the applicant completes essential learning (general education) requirements of the program at another college or university, the registrar must receive final transcripts before Colorado Mesa University will award a degree.

Program Application and Selection Process

The deadline for application to the program each academic year is March 1. The number of clinical facilities in the area limits the number of admissions. Students are selected based on academic preparation, Test of Essential Academic Skills for Allied Health (TEAS for AH) scores, aptitude for service within the field, and positions available in the program. This field of study requires a strong math and science background and effective communication skills. The program recommends high school courses in biology, chemistry, and algebra.

BSRS Application Procedure Check-off Form

<http://www.coloradomesa.edu/health-sciences/documents/bsrs-program-application--check-off-form.pdf>

BSRS Transcript Request form

<http://www.coloradomesa.edu/health-sciences/documents/bsrs-application--transcript-request-form.pdf>

Bachelor of Science in Radiologic Sciences (BSRS) Program Application

<http://www.coloradomesa.edu/health-sciences/documents/bsrs-program-application.pdf>

Initial Selection Criteria

The selection process includes an academic ranking of applicants based on the following criteria:

1. Overall TEAS score (may only take one time per application)
2. Individual TEAS scores for both math and science sections
3. College cumulative grade point average for individuals who have over 36 credit hours completed prior to application
4. Grade received for the first attempt of BIOL 209 (A&P I) and BIOL 209L (A&P I Lab) or equivalent
5. Essay
6. Reductions for courses (except BIOL 209/209L or equivalent) with a final grade lower than "C"

Final Selection

A panel of five or more radiologic technologists, including program faculty, conducts interviews of the candidate pool to determine the final selection. Acceptance is contingent on successful completion of foundation courses (if necessary), a criminal background investigation, and drug screen.

Common Questions & Answers about the Bachelor Science in Radiologic Sciences

Please read all application materials, the program course descriptions in the CMU catalog, and visit the program website at www.coloradomesa.edu/healthsciences/radtech.html.

Do I have to receive acceptance from CMU before I can apply to the BSRS?

Yes.

Does the BSRS require an admission fee?

No, there is no fee to apply to the program, but there is a fee to apply to CMU.

Should I apply to the BSRS before I request prior college transcripts to be mailed to CMU?

You may turn in the program application form before you ask other colleges to send transcripts. However, it is your responsibility to make sure the Department of Health Sciences receives all application documents before the deadline.

Do all application documents have to be received by the Department of Health Sciences office before the application deadline?

Yes, the Department of Health Sciences must receive all college transcripts, a transcript evaluation (if you have taken courses from other colleges, Test of Essential Academic Skills for Allied Health test results, and program application prior to the deadline.

Do I have to complete all the essential learning courses prior to *applying* to the program?

No, you do not. However, most students have completed (or are enrolled in) the essential learning courses and the foundation prerequisite courses at the time of application to the program.

Do I have to complete the foundation prerequisite courses (BIOL 209/209L, BIOL 210210/L, BIOL 241, STAT 200) prior to *applying* to the program?

No, however you must successfully complete the courses prior to entering the program. When applying to the program, most students have completed or enrolled in the courses. If you have not completed the courses and the program accepts you into the program, acceptance is contingent on successful completion of all foundation courses prior to the beginning of fall semester. Otherwise, the program will deny you entry into the program.

What classes can I take to fulfill essential learning requirements?

Refer to the Requirements for Baccalaureate Degrees in the Colorado Mesa University Catalog. The selected 100 and 200 level classes listed in this section are acceptable for fulfilling essential learning requirements.

Should I speak with an advisor before I register for essential learning courses?

You are strongly encouraged to speak with a Radiologic Sciences Program advisor prior to registering for essential learning courses. You may only register for RADS courses after acceptance into the program.

Can I take The TEAS for Allied Health exam more than one time?

*Students applying to the program may take the TEAS for Allied Health **once** per application. If you reapply the following year, you may take the test again.*

If I live outside the Grand Junction area, do I have to come to CMU to take the TEAS exam?

No. You may arrange to take the online exam through a proctor at a testing center or library in your area.

Can I enroll in the BSRS on a part-time basis?

While completing essential learning courses, you can enroll part-time, but once you start the program, you must enroll fulltime to complete coursework.

How many students does the BSRS accept each year?

The program accepts 21 students each year. Please note there are typically multiple applicants for each opening.

What are the pass rates for the national examination?

See the National Comparison of Pass Rates in the Program Effectiveness Data above.

How does the program select students to begin the program?

First, the program awards points based on academic preparation and the TEAS for AH score. Second, the program invites candidates with the highest academic ranking to interview. The program selects students to begin the program based on the interview process.

Does the program use a waiting list?

No, the program does not use a waiting list. Applicants must reapply for consideration the following year.

When does the program start?

Program courses begin in the fall semester. Program courses are sequential and must be taken in order.

How long is the program?

The BSRS consists of five consecutive semesters of program courses and generally four semesters of essential learning and foundation prerequisite courses. Students typically attend the university four years (assuming acceptance into the program with the first application).

Do students complete education in the clinical setting?

Yes, clinical experience involved. Students experience over 850 hours of clinical education.

How much does the program cost?

Please visit <http://www.coloradomesa.edu/student-accounts/expenses.html> for current tuition and fee information. The admissions office can answer questions about tuition and fees. See Projected BSRS Costs for estimated expenditures for the program.

Are there any scholarships specifically for radiologic science students?

Yes, there are scholarships available for radiologic science students, but these are usually for students enrolled in the program. CMU processes applications for scholarships during the spring semester to assist students in paying for the next academic year. Please contact the Financial Aid Department for further aid information.

Can I work while I take classes?

Some students work during the program. However, it is challenging and the program does not recommend it for most students. Student should expect to spend a minimum of two hours of study and preparation for every hour in class and lab. The program recommends limiting work or other substantial commitments to less than 20 hours per week.

Do I need my own computer?

Many courses include computer and Internet-based assignments. Having your own computer gives you more freedom in completing course assignments. Computer labs are available on campus for student use. As a student, you receive access to the MAVzone and an email account, which you will be required to access regularly.