

Radiologic Technology

Associate of Applied Science



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Visit us on the Internet: <http://www.tmcc.edu/x-ray>

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TMCC is an equal opportunity/affirmative action institution. Qualified students with physical or documented learning disabilities have the right to free accommodation to ensure equal access to educational opportunities at TMCC.

TMCC'S RADIOLOGIC TECHNOLOGY DEGREE PROGRAM

The mission of the Radiologic Technology Program is to provide general and basic science education, combined with a sound foundation in the theory and art of radiologic technology to meet the educational needs of the students. This is evidenced by a competency-based program employing various teaching methodologies and technologies delivered through quality instruction. The graduates will have the knowledge and skills necessary to successfully take the American Registry of Radiologic Technologist's Examination for Radiographers and become a member of the health care team.

Once selected for the program, the students complete 24 months of educational experiences. As part of the curriculum, students spend 1,952 hours in clinical education experiences conducted in cooperation with departments of radiology in Reno, Sparks, and Carson City.

Prospective students interested in current program policies are encouraged to review the current Radiologic Technology Program Policy Handbook. The handbook is on the program web page (www.tmcc.edu/x-ray).

AMERICAN REGISTRY OF RADIOLOGIC TECHNOLOGISTS (ARRT)

The ARRT is the national agency responsible for testing, certifying, registering, and renewing registration of radiologic technologists. This involves, but is not limited to, mandatory continuing education and the investigation of ethical violations. Persons with prior felony or misdemeanor convictions may be admitted to the program but be prohibited by the ARRT from taking the examination. The ARRT will conduct a pre-application review to determine the impact of a conviction on eligibility. Pre-Application Review Forms may be requested from the ARRT Department of Regulatory Services at (651) 687-0048 or on their web page www.arrt.org.

BACKGROUND CHECK AND DRUG TESTING

The hospitals associated with the program require a background check and drug testing to insure the safety of the patients treated by program students. Students selected for the program will be required to comply prior to starting the program (instructions to be provided by the program coordinator after the full class is confirmed).

QUALITIES OF A TECHNOLOGIST

Radiologic technologists must be able to:

- ◆ sit, stand, bend, squat, twist, walk, lift, and to reach for extended periods;
- ◆ grasp and perform fine manipulations;
- ◆ carry and push heavy and sometimes cumbersome objects;
- ◆ be free from conditions which put other humans at risk for harm;
- ◆ read, write, record and report in English;
- ◆ comprehend written and oral directions and carry them out.
- ◆ speak and understand English to adequately communicate orally;
- ◆ perform simple mathematical functions;
- ◆ integrate information and problem solve through critical thinking;
- ◆ effectively interact with the environment and other people;
- ◆ concentrate, remember and attend class.

CURRICULUM

(Associate of Applied Science - Radiologic Technology)

Other courses may be required as prerequisites to the required courses.

PREREQUISITES

("C" or better required)

BIOL 223 and BIOL 224 OR BIOL 141 and BIOL 142	Anatomy & Physiology I and II (Prerequisite: BIOL 190) Human Structure and Function I and II (Not transferable for advanced imaging degrees)	8 credits
RAD 101 MATH 105	Exploration in Radiology (formerly RAD 090) Math for Radiologic Technology (or minimum of MATH 120)	0.5 credit 3 credits
ENG 101 NURS 130 CLS 151 CLS 152	Composition I Nursing Assistant Phlebotomy Applied Phlebotomy	3 credits 6 credits 2 credits 2 credits

CORE REQUIREMENTS

Semester I (Fall)

IS 101	Intro Information Systems	3
RAD 103	Medical Ethics	1
RAD 110	Fund of Clinical Radiography	1
RAD 112	Medical Term. & Patient Care	2
RAD 116	Radiography I	3
RAD 118	Radiology Physics & Circuitry	3
	Total Required Credits	13

Semester III (Fall)

RAD 230	Clinical Radiography III	3
RAD 236	Rad Contrast/Routine Exams	2
RAD 238	Radiation Safety & Protection	2
_____	Social Science/Humanities or Diversity	3
	Total Required Credits	10

Semester II (Spring)

_____	US & Nevada Constitution	3
RAD 124	Radiographic Photo & Tech	3
RAD 125	Clinical Radiography I	2
RAD 126	Radiography II	3
RAD 128	Imaging Equipment	3
	Total Required Credits	14

Semester IV (Spring)

RAD 242	Radiology Quality Management	1
RAD 244	Diag. and Ther. Radiation	2
RAD 245	Clinical Radiography IV	3
RAD 247	Radiology Quality Control	1
_____	English/Communications	3
_____	Human Relations	3
	Total Required Credits	13

Summer Session I

RAD 220	Clinical Radiography II	3
	Total Required Credits	3

Summer Session II

RAD250	Clinical Radiography V	3
RAD259	Seminar in Radiography	2
	Total Required Credits	5

SUMMARY OF CLINICAL EDUCATION

RAD 110 Fundamentals of Clinical Radiography	1 credits	Fall I	132 Hours
RAD 125 Clinical Radiography I	2 credits	Spring I	256 Hours
RAD 220 Clinical Radiography II	3 credits	Summer I	400 Hours
RAD 230 Clinical Radiography III	3 credits	Fall II	384 Hours
RAD 245 Clinical Radiography IV	3 credits	Spring II	384 Hours
RAD 250 Clinical Radiography V	3 credits	Summer II	396 Hours
TOTAL HOURS			1952 Hours

PROGRAM TIME COMMITMENT

The chart below identifies the weekly time commitment per course **and** per semester for the Radiology. Program “core” courses. General education degree requirements taken while in the program will increase the hourly commitment.

	Course Title	Lecture Hr/wk	Lab Hr/wk	Clinical Hr/wk	Total Hr/wk
Fall I					
RAD 103	Medical Ethics	1			1
RAD 110	Fundamentals of Clinical Radiography			9	9
RAD 112	Med. Terminology & Patient Care	2			2
RAD 116	Radiography I	2	3		5
RAD 118	Radiology Physics & Circuitry	3			3
Total Fall I		8	3	9	20
Spring I					
RAD 124	Radiographic Photography & Techniques	2	3		5
RAD 125	Clinical Radiography I			16	16
RAD 126	Radiography II	2	3		5
RAD 128	Imaging Equipment	3			3
Total Spring I		7	6	16	29
Summer I					
RAD 220	Clinical Radiography II			40	40
Fall II					
RAD 230	Clinical Radiography III			24	24
RAD 236	Radiographic Contrast/Routine Exams	2			2
RAD 238	Radiation Safety & Protection	2			2
Total Fall II		4		24	28
Spring II					
RAD 242	Radiology Quality Management	1			1
RAD 244	Diagnostic & Therapeutic Radiology	2			2
RAD 245	Clinical Radiography IV			24	24
RAD 247	Radiology Quality Control	1			1
Total Spring II		4		24	28
Summer II					
RAD 250	Clinical Radiography V			36	36
RAD 259	Seminar in Radiography	2			2
Total Summer II		2		36	38

COSTS FOR RADIOLOGIC TECHNOLOGY PROGRAM

Listed below are the estimated student costs for an Associate in Applied Science Degree in Radiologic Technology at Truckee Meadows Community College. Some of the costs, such as books and uniforms, may vary due to price increases from publishers and manufacturers.

Tuition *:

74.5 credits @ \$83.75 per credit **	\$6,239.38
8 credits @ \$86.75 per credit ** (summer session)	\$694.00
Application fee (one time fee for new students)	\$10.00
Approximate Costs	\$6,943.38

* Does not include out-of-state fees which may be applicable.

** Subject to change by the Board of Regents without notice.

Program related costs

• Uniforms	\$500.00
• Background check with precheck.com (cost will vary depending on student)	\$48.50
• Drug testing (one time through CertifiedBackground.com)	\$35.00
• Lab & Special fees	\$303.50
• Immunization Tracker with CertifiedBackground.com (for 2 years).....	\$24.00
• Immunizations (Hepatitis B, MMR,TDaP,TD,Varicella)	\$230.00
• Initial 2 step TB skin test	\$30.00
• Annual 1 step TB skin test	\$15.00
• Health Care Provider CPR Card (1 – 2 classes – must remain current)	\$100.00
• Books (estimate).....	\$1100.00
• Graduation pin.....	\$66.00
• Miscellaneous (Patches, Lead Markers, 6 Semester ID Badges).....	\$70.00
Sub Total	\$2,522.00
Approximate Overall Costs without Insurance	\$9,465.38

PROGRAM APPLICATION PROCESS

The radiologic technology program begins each fall semester. Admission to the program is limited to 16 students and requires specific admission procedures. Students are selected by means of a formal program application and the calculation of assigned points. Applicants must be at least 17 years old.

Become eligible to apply by completing the following:

1. Submit an application for admission to the college.
2. Have completed the following courses with a grade of “C” or better
 - MATH 105, Math for Radiologic Technology (or MATH 120 or higher)
 - ENG 101, Composition I
 - RAD 101, Exploration in Radiology (formerly RAD 090)

The following courses must have been completed in the past five years:

 - BIOL 223 and BIOL 224, Anatomy and Physiology I and II **OR**
BIOL 141 and BIOL 142, Human Structure and Function I and II
 - NURS 130, Nursing Assistant
 - State Board of Nursing Certificate (CNA) preferred, but not required
 - Current CNA exempt from 5 year limit
 - Acceptable alternative documentation
 - Completion of EMT Intermediate Level or higher course
 - Current certification as EMT Intermediate or higher
 - CLS 151& 152 Phlebotomy & Applied Phlebotomy ((former LTE 110 content)
 - Acceptable alternative documentation
 - Completion of EMT Intermediate Level or higher course
 - Current certification as EMT Intermediate or higher
 - CLS 153 must also be taken to apply for license/certification.
3. Have a minimum grade point average of 2.7 in all AAS-Radiologic Technology degree coursework.
4. Submit official transcripts of all previous college education to admissions and records.
5. Submit an official transcript showing proof of high school graduation or official results of high school equivalency with program application (persons with a recognized degree exempt).
6. Download the current Radiologic Technology Program application from www.tmcc.edu/x-ray (available March 1 - June 1 only).

Submit the completed application and documentation to the Toni Hippert in the Dean of the School of Science Office (Red Mountain 324) or mail (return receipt requested recommended) to: Toni Hippert, TMCC – School of Science (R 324), 7000 Dandini Blvd, Reno NV 89512 by **June 1** of the current year.

Selection to the radiologic technology program will be based on the number of points the applicant receives. Points will be awarded for a previously completed degree, specific health occupations, residency, completion of general education degree requirements and the completion of support courses and/or work experience. Eligible students will be numerically ranked, according to total points. Admission is offered to the applicants on the list with the highest points. In the event of applicants having an equal number of points, the student's Associate in Applied Science degree in Radiologic Technology GPA will be used to rank the tied group. If the GPA does not resolve the tie, "lots" will be drawn to decide selection. Selection to the radiologic technology program is done on a yearly basis. Applicants not selected must reapply for consideration.

When selected for admission, in response to a letter from the program coordinator, the student will enroll in Magnus Immunization Track through Certifiedbackground.com and provide documentation of the following **prior to the first day of class**:

1. Evidence of current major medical insurance coverage;
2. Evidence of two negative TB skin tests done in the past year within 3 months of each other (persons with prior positive TB test must see program coordinator).
3. Evidence of required immunization status for Hepatitis B, Tdap, TD, Varicella and MMR
4. Evidence of a current American Heart Association **health care provider CPR card**; and

The student must also do the following **prior to the first day of class**:

- Provide the Technical Assessment Standards form signed by a health care provider,
- Request the required background check & drug test (instructions to be provided by the program coordinator after full class is confirmed).

PROGRAM REQUIREMENTS

Progression in the program is contingent upon maintaining a grade of "C" (75%) or better in all Radiologic Technology courses. All Radiologic technology courses (except RAD 101) must be taken in the sequence outlined in the Radiologic Technology curriculum. General education degree requirements may be taken as outlined in the curriculum or prior to selection to the program. Since classes may be schedule during both day and evening hours, the faculty recommends completion of as many general education requirements as possible prior to selection to the program. **IS 101 must be completed prior to the spring semester of the first year in the program.**

STUDENT OUTCOMES

As a graduate, students will be able to:

- ◆ use oral and written medical communication;
- ◆ demonstrate knowledge of human structure, function and pathology;
- ◆ anticipate and provide basic patient care and comfort;
- ◆ apply principles of body mechanics;
- ◆ perform basic mathematical functions;
- ◆ operate radiographic imaging equipment and accessory devices;
- ◆ position the patient and imaging system to perform radiographic examinations and procedures;
- ◆ modify standard procedures to accommodate for patient condition and other variables;
- ◆ process radiographs;
- ◆ determine exposure factors to obtain diagnostic quality radiographs with minimum radiation exposure;
- ◆ adapt exposure factors for various patient conditions, equipment, accessories and contrast media to maintain appropriate radiographic quality;
- ◆ practice radiation protection for the patient, self, and others;
- ◆ recognize emergency patient conditions and initiate first aid and basic life-support procedures;
- ◆ evaluate radiographic images for appropriate positioning and image quality;
- ◆ evaluate the performance of radiographic systems, know the safe limits of equipment operation, and report malfunctions to the appropriate authority;
- ◆ demonstrate knowledge and skills relating to quality assurance; and
- ◆ exercise independent judgment and discretion in the technical performance of medical imaging procedures.

RADIOLOGIC TECHNOLOGY PROGRAM
CHECKLIST
FOR PERSONAL USE ONLY

Have you successfully completed the following requirements for application to the Radiologic Technology Program?

- Been admitted as a student at TMCC
- Requested transcripts for courses taken at other schools be sent to the Office of Admissions and Records at TMCC
- Completed the following prerequisite courses with a minimum grade of "C" and within the required time limit
 - RAD 101 Exploration in Radiology (formerly RAD 090)
 - NURS 130 Nursing Assistant
 - CLS 151/152 Phlebotomy & Applied Phlebotomy
(formerly LTE 110 - Technique of Venipuncture)
CLS 153 must also be taken to apply for license/certification
 - BIOLOGY COURSES
 - ENG 101 Composition I
 - MATH 105 Math for Radiologic Technology (or Math 120 or higher)
- Have a 2.7 GPA in Associate of Applied Science in Radiologic Technology coursework.
- Turned in all materials (transcripts, proof of HS graduation or GED, health occupation certifications) and completed the "Application for Admission to the Radiologic Technology Program" by **June 1**.

The following courses/content areas are general education degree requirements for AAS Degree. It is strongly recommended that these courses/content areas be completed prior to entrance into the Radiologic Technology Program. If you will be seeking financial aid while in the program, please contact the Financial Aid Office to determine the impact of this recommendation on your status and qualifications.

- IS 101 Introduction to Information Systems
- 3 credits US and Nevada Constitution
- 3 credits Diversity, Social Science, or Humanities
- 3 credits Human Relations
- 3 credits English or Communications

The following courses are worth one point toward selection to the program. **Refer to the admission criteria point system specifics.**

- CHEM 100 level transferable or higher
- PHYS 100 level transferable or higher
- MATH 120 Fundamentals of College Math or higher
- PHIL 244 Bioethics

RADIOLOGIC TECHNOLOGY PROGRAM
 ADMISSION CRITERIA POINT SYSTEM
MAXIMUM POINTS POSSIBLE - 13
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PREVIOUS EDUCATION- MAXIMUM 1 POINT

An Associate Degree or higher (1 point) _____ **out of 1**

CREDENTIALLED HEALTH OCCUPATION - MAXIMUM 2 POINTS _____ **out of 2**

Credentialed Health Occupation (1 point per credential) A copy of the **current** credentials must be supplied.

EXAMPLES OF ACCEPTABLE HEALTH OCCUPATIONS

- CNA
- Dietician
- Dental Assistant
- Dental Hygienist
- Doctor of Medicine
- ECG Technician
- EMT
- Laboratory Technician
- LPN
- Medical Assistant
- Medical Technologist
- Non ARRT X-Ray Tech
- Occupational Therapist
- Optician
- Paramedic
- Phlebotomist
- Physical Therapy Assis
- Respiratory Therapist
- Registered Nurse
- Surgical Technologist

**If your credentialed occupation is not listed above, PRIOR approval is required from the Program Coordinator

RESIDENCY _____ **out of 2**

Nevada Resident (2 points) **or** Good Neighbor County (1 point)

AAS General Education Requirements - MAXIMUM 5 POINTS _____ **out of 5**

(1 pt for courses successfully completed with a "C" or better)

- _____ IS 101 Introduction to Information Systems
- _____ US and Nevada Constitution (see AAS courses requirements in TMCC catalog)
- _____ English / Communications
(cannot be ENG 101. See AAS courses requirements in TMCC catalog)
- _____ Diversity / Social Science / Humanities
(see AAS courses requirements in TMCC catalog)
- _____ Human Relations (see AAS courses requirements in TMCC catalog)

SUPPORT AREA - MAXIMUM 3 POINTS _____ **out of 3**

Points may be obtained strictly from course work or a combination of course work & work experience (Must earn a "C" or better)

- _____ CHEM 100 Level Transferable or Higher
- _____ PHYS 100 Level Transferable or Higher
- _____ MATH 120 Fundamentals of College Math **or** higher
- _____ PHIL 244 Bioethics

_____ **CURRENT MEDICAL WORK EXPERIENCE** (1 to 2 points) - To receive point(s), the applicant must; be in a paid position, working a minimum of 20 hours / week, for a minimum of 6 months at the time of application. The students must **provide a formal job description and a letter from the immediate supervisor documenting employment dates, and duties.**

- Medical Work Experience without patient care (1 point)
- Medical Work Experience with patient care (2 points) – **Must document patient care responsibilities 50% of time**

Total _____ **out of 13**