

Institution: Montana State University-Billings College of Technology
Program: Associate of Applied Science in Radiologic Technology
Date: September 21-23, 2005

PROGRAM PROPOSAL

Program Description

Radiologic Technology at MSU-Billings College of Technology is a two year Associate of Applied Science program. It is designed to provide the didactic and clinical training necessary for a graduate to pass the American Society of Radiologic Technologists national certification examination as well as provide the skills necessary to enter the work force as a Registered Radiologic Technologist (RT). These skills include general (skeletal) radiography as well as fluoroscopy, operating room, emergency room, trauma, pediatrics and geriatrics radiography. The radiology student is trained to use special equipment to create images of internal organs, tissues and bones. The radiographic images produced by the technologist are used by physicians to diagnose medical problems and diseases.

This radiologic technology program requires a semester of prerequisite work and spans four semesters and one summer session for a total of 72 credit hours. Completion of the pre-health core of courses qualifies a student to apply for entry into the Radiologic Technology program. The MSU-Billings College of Technology Radiologic Technology program is a competitive program. In order to be accepted into the clinical part of the program, students must successfully complete the required prerequisite semester, or approved equivalent, and submit the required application.

The selection process for admission into this program involves two phases. Phase One involves a point system that is used to select the 25 applicants that will progress to Phase Two of the selection process. Phase Two involves a personal interview with the Radiologic Technology Selection Committee. Sixteen students selected from Phase Two will become the new Radiologic Technology class.

This is a very rigorous program of study that follows the curriculum standards set by the American Society of Radiologic Technologist and recommended by the American Registry of Radiologic Technologists. Students average 40 contact hours per week in the classroom, lab and clinical work. Education content includes patient care, pathology, x-ray image critique, ethics, radiation physics, radiation protection, communication skill and computer skills. At the successful completion of this program, the student is eligible to sit for the American Registry of Radiologic Technologists national certification examination. MSU-Billings is accredited by the Northwest Commission on Colleges and Universities which the ARRT recognizes for radiology school accreditation.

A. Specify the objectives to be reached by the addition of this program.

For the student searching for a vital and meaningful profession, Radiologic Technology provides an affordable, quality education. This challenging profession provides a wide variety of opportunities and financial prospects.

The Radiologic Technology program is designed to meet the needs of the local, state and national demand for radiologic technologists. Due to the increasing number of imaging exams performed per year as well as retirement from the field, radiologic technologists are projected to be in increasing demand during the next ten years. Available and well trained healthcare workers are vital for maintaining the health of Montana's population.

For a number of years the healthcare facilities within this region have had significant problems filling vacant positions for technologists. The American Hospital Association reported the current hospital vacancy rate of radiologic technologists at 15.3% (17% in the west). The U.S. Department of Labor reported the United States will need 55,000 more technologists by 2008. This program is designed to provide quality, certified radiologic technologists to meet this current and projected shortage.

B. Specify in detail the present faculty, facilities and equipment and library holdings in support of this program and compare them to known or anticipated minimum standards for accreditation

Radiologic Technology Program Faculty

The faculty for this program consists of one full time program director with instructional responsibilities. The director's salary is paid by MSU-Billings College of Technology and the two main clinical sites, Saint Vincent Healthcare and Deaconess Billings Clinic and Hospital. Each of these hospitals has a full-time clinical instructor whose salary is paid by the respective hospital. The two clinical instructors, as well as the program, are under the direction of the program director. This collaborative effort by these hospitals and the MSU-Billings College of Technology has considerably reduced the cost of this program.

Faculty and Clinical Instructor Credentials

- Mr. Mick Ender, Director of Radiologic Technology, ARRT Registered Radiologic Technologist, Bachelors of Science in Education
- Mr. Jayme Wynegar, ARRT Registered Radiologic Technologist, Clinical Instructor, Deaconess Billings Clinic
- Mrs. Mary Bargstadt, ARRT Registered Radiologic Technologist, Clinical Instructor, Saint Vincent Healthcare

Facilities

Class room instruction is held on the College of Technology campus. Radiologic Technology labs and clinicals are held at each hospital. A laboratory is proposed to be added at the College of Technology campus with the newly approved and funded building expansion. Planning for the new building is to begin in the fall of 2005 with an estimated occupancy date of fall 2007.

Equipment

The clinical component of the curriculum taught at the hospitals has provided the equipment required for the program. Congressionally Directed Grants and a 2 Year Equipment State Grant has provided additional training aids (Radiographic Phantoms) for the clinical setting. Additional equipment to furnish a lab to be located on the College of Technology campus is being funded through a 2 Year Equipment State Grant.

Library Holdings

The students have access to the Mansfield Medical Library at Saint Vincent Healthcare, the medical library at Deaconess Billings Clinic, the MSU-Billings main campus library and the College of Technology library. At this time a further increase in library holdings for this program has not been necessary.

Accreditation

The American Registry of Radiologic Technologists (AART) recognizes the Northwest Colleges and Universities as an approved body for program accreditation.

C. Additional faculty requirements

A program director was hired by MSU Billings College of Technology
Two Clinical Instructors were hired by the hospital partners

D. Increased costs

An estimate of the ongoing personal services and operating is \$80,016 which will be covered by the use of Current General Operating Funds, Tuition Revenue, and external support by the hospitals.

E. Effects on enrollment

Radiologic Technology, as of August 16, 2005, has 76 students enrolled in pre-Radiologic Technology. This number is expected to increase by the start of the fall semester. As this program requires "hand-on" learning, there are only sixteen clinical sites available per year for students who successfully complete the prerequisite semester and are admitted into the clinical part of the program. Fifteen students per year are expected to graduate from this program.

F. List the new courses this program will add to the curriculum and specify the requirements for the degree.

The following is the curriculum for the Associate of Applied Science in Radiologic Technology. The new courses added to the College of Technology include all classes with the RAD rubric. The other courses listed include courses already offered for the other Health Occupations certificates and degrees.

**Radiologic Technology Associate of Applied Science Degree
Plan of Study (72 Credits)**

Prerequisite Semester	
HLTH 100 Survey of Health Occupations	1 cr
BIOL 113 Anatomy and Physiology I	3 cr
BIOL 114 Anatomy and Physiology I Lab	1 cr
HLTH 150 Health Occupations Terminology I	3 cr
ENGL 140 Business Writing or	3 cr
ENGL 145 Technical Communications	
CMP 105 Introduction to Computers	3 cr
MATH 141 Contemporary Math or	3 cr
STAT 141 Introduction to Statistics	
Total	17 cr
First Semester (Fall Semester)	
BIOL 116 Human Anatomy and Physiology II	3 cr
BIOL 117 Human Anatomy and Physiology II Lab	1 cr
RAD 101 Radiologic Technology I	2 cr
RAD 102 Clinical Radiology I	5 cr
RAD 104 Principles of Radiographic Exposure	2 cr
Total	13 cr
Second Semester (Spring Semester)	
RAD 110 Radiation Physics and Biological Principles	3 cr
RAD 151 Radiologic Technology II	3 cr
RAD 152 Clinical Radiology II	6 cr
Total	12 cr
Summer Session	
RAD 181 Radiologic Technology III	2 cr
RAD 182 Clinical Radiology III	4 cr
Total	6 cr
Third Semester (Fall Semester)	
RAD 201 Radiologic Technology IV	3 cr
RAD 202 Clinical Radiology IV	6 cr
CTCM 109 Human Relations	3 cr
Total	12 cr
Fourth Semester (Spring Semester)	
HLTH 255 Med Law and Ethics	3 cr
RAD 251 Radiologic Technology V	2 cr

RAD 252 Clinical Radiology V	6 cr
RAD 271 Transition to Radiologic Technologist	<u>1 cr</u>
Total	12 cr

G. Interdepartmental implications

Other department implications include the increased enrollment in the prerequisite semester courses by the pre-Radiologic Technology students and general education courses by the students enrolled in the clinical portion of the program.

H. Explain how the recommendation to submit this proposal to the B of R was made.

In spring of 2003, MSU-B COT was contacted by Saint Vincent Healthcare and Deaconess Billings Hospital with a proposal to shift the hospital based radiologic training program to an Associate of Applied Science degree offered at MSU Billings. A committee made up of healthcare administrators and College of Technology faculty and administrators was formed to investigate the viability of this proposal. The committee formed a subcommittee to create a proposed plan of study, a business plan, and a formal proposal which was submitted to the Provost and Chancellor of MSU Billings as well as to the Administration of both Hospitals. Approval was given by the Provost to move forward to create curriculum and a full program proposal.

Curriculum was proposed and routed through the University curriculum approval process. Proposals for new curriculum begin at the faculty level (internal) and involve input from advisory committees (external) and/or accreditation agencies (external). In instances such as this where permanent faculty is not in place at the time of the proposal to create required documentation, the curriculum is developed by existing faculty, staff, advisory committee members and industry to create the initial submission. Documentation is then submitted to the appropriate Program Curriculum Committee for final review. The proposal is reviewed by the appropriate Department Chair, College Curriculum Committee, Dean of the College, MSU-Billings Undergraduate Curriculum Committee, Faculty Senate, Provost and finally the Chancellor

In August 2003, the Board of Regents approved a Level I request by Montana State University-Billings College of Technology (MSU-B COT) to offer an Associate of Applied Science in Radiologic Technology. A Memorandum of Understanding was signed by the Hospitals and the University. After completing three semesters (Fall 2004, Spring 2005, Summer 2005) of teaching the Radiologic Technology program, the University is now requesting the program be considered for Level II approval.

APPENDIX

A. Letters of Support