



RED RIVER COLLEGE
OF APPLIED ARTS, SCIENCE AND TECHNOLOGY

**Medical Radiologic Technology
Curriculum Validation – Program Renewal**

Final Report

June 2004

Submitted to:

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Submitted by:

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Acknowledgements

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Representatives from the community:

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Jamie Humniski	Health Sciences Centre
Christine Preachuk	Health Sciences Centre
Karen Basset	Seven Oaks Hospital
June Wagner	Children's Hospital

The Medical Radiologic Technology Advisory Committee:

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Maggie Ramsay	BRHA, Brandon
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Medical Radiologic Technology Curriculum Validation- Program Renewal

Final Report

Introduction:

The Curriculum Validation process for the Medical Radiologic Technology program began in December 2003, following the Curriculum Validation model designed by the Program and Curriculum Development (P&CD) Department and approved by the Red River College (RRC) Senior Academic Committee (SAC). The intent of the Curriculum Validation model is to analyze the current status of the program and to chart a course for program renewal. The process uses a structured format identifying the current status of industry expectations, a description and vision for a desired future state, and a 5-year plan for creating the desired future state.

Curriculum Validation Deliverables:

Normally, the Curriculum Validation – Program Renewal Model produces 7 deliverables. For the Medical Radiologic Technology Curriculum Validation – Program Renewal, an eighth deliverable was included to help prepare the program for an upcoming accreditation review in the 2004 – 2005 Academic Year.

At the conclusion of the Medical Radiologic Technology Curriculum Validation – Program Renewal process, the eight interrelated deliverables include:

1. Environmental Scan and Analysis of the key findings of similar programs across Canada.
2. Industry Occupational Analysis (DACUM)
3. Graduate Skills and Abilities Chart
4. Graduate Profile
5. Graduate Profile and Canadian Association of Medical Radiation Technologists (CAMRT) Competencies Comparison
6. Program Renewal Plan
7. A 5-year Program Renewal Plan in Gantt Chart format
8. Final Report

Outcomes from the Deliverables:

Environmental Scan and Key Findings (Appendix A)

The Environmental Scan provides the faculty and chair with information about similar programs that are offered in Colleges and Universities locally and nationally. The Curriculum Validation facilitator gathered information on similar programs and trends influencing their development and direction. The information was gathered by the

Curriculum Validation Facilitator through web sites, email and telephone contact. The scan gathered information under the following categories:

- Name of institution, location, contact person
- Size of program
- Credential offered
- Program features
- Curriculum Model
- Curriculum Content
- Student Assessment
- Current and Coming Challenges
- Curriculum Renewal
- Partnerships
- Additional Information (Other and comments)

For the Medical Radiologic Technology Curriculum Validation – Program Renewal, 9 programs were scanned. They included:

Red River College (RRC)
Northern Alberta Institute of Technology (NAIT)
Southern Alberta Institute of Technology (SAIT)
British Columbia Institute of Technology (BCIT)
College of the North Atlantic (CNA)
Mohawk College of Applied Arts and Technology
The Michener Institute of Applied Health Sciences
Dawson College
Saskatchewan Institute of Applied Science and Technology (SAIT)

Key findings from the Environmental Scan

Enrolment, retention, and attrition:

- Dawson College noted a good representation of older students of various ethnicities
- CNA is establishing a campus in Qatar where the program will be offered
- Tuition fees are free in Quebec for Canadian citizens

Delivery:

- Several colleges have insufficient lab space for students
- Employer expectations for didactic and clinical instructors were different and sometimes problematic

Technology:

- Some colleges identified a lack of funding for equipment replacement and up-to-date equipment
- Need for computer radiography equipment so students can have sufficient practice time
- Digital Imaging is the future of MRT and more time is needed to train students
- NAIT is increasing focus on CT in base curriculum
- NAIT and SAIT are moving distance delivery courses to WebCT and are exploring more online courses
- NAIT is currently exploring the use of PDA's (personal data assistants) to track competency completion
- Some colleges indicated the need for a dedicated DR room
- RRC would like to update current Radiological equipment at the college (funding is difficult to obtain)

Course Content / Curriculum:

- Several colleges are concerned with insufficient time to deliver all components of the curriculum
- Several colleges are noting a continued request from employers for "soft skills" (students dislike the courses)
- SAIT redesigned the program to be a shorter program using the NAIT curriculum and is currently working through the implementation of the new model
- RRC has a formal curriculum validation process every 5 years with ongoing curriculum renewal as needed but several other colleges have an ongoing curriculum renewal process with no formal process

Practicum:

- Several colleges indicated shortage of clinical sites for student placements
- Clinical sites are not following one standardized format of instruction, assessment and evaluation
- Many technologists working at clinical sites are not convinced that students can be sufficiently competent in shortened time periods

Student Assessment/Requirement for Graduation

- Most colleges are moving toward a combined diploma/degree program as per CAMRT requirements for accreditation (this will be in keeping with reciprocity agreements with other countries such as the USA, UK, Australia and most of Europe)
- Degree issue is a big one for NAIT and SAIT – Alberta government is very adamant that degree as entry to practice is NOT required

Additional Challenges:

- RRC notes a need for improved communication between didactic and clinical instructors since some instructors are at the college and some are at the clinical sites
- Several colleges indicated heavy instructor workloads including visiting clinical sites
- RRC noted difficulty finding suitable substitute and replacement instructors (remuneration is too small),
- Radiologic Technologists must be qualified to do MRI and Ultrasound concerns were noted regarding insufficient program hours to develop student competency
- Several colleges would like to have Digital fluoroscopy equipment (students are only evaluated from theoretical point of view and gain practical experience during clinical placements)

Analysis

The Environmental Scan indicated a move by most provinces (with the exception of Alberta and Quebec) to a combined diploma/degree certification in keeping with the requirements for accreditation by the CAMRT. Rapidly advancing technologies in the field is forcing most programs (and most colleges in general) to balance the demand for purchasing or replacing equipment with the fiscal restraints typical of post-secondary institutions in Canada.

Industry Occupational Analysis (DACUM) Chart (Appendix B)

The Industry Occupational Analysis using the DACUM analysis is a familiar component of the curriculum development process at Red River College and provides the program with a description of regional occupational needs. Included in the process is the identification of emerging and retiring industry trends.

Industry participants were invited to a two day workshop held on January 21st and January 28th, 2004. The end product was the development of the DACUM chart (see Appendix B for the completed chart.)

The resulting Medical Radiologic Technology DACUM identified the following emerging and retiring trends:

Emerging Industry Trends:

- CT
- CR (Computer Radiography)
- Photo time depending on age of equipment
- Technologists doing barium work (increasing knowledge necessary of physiology)

- PACs
- Picture archiving communication
- PET
- Aging population
- Digital radiography
- VCUG

Retiring industry trends:

- Processing and developing equipment
- Tomography
- Chemicals (Film)
- Technique knowledge (more automation)
- IVPs and other examinations
- Arthrography

Graduate Skills and Abilities Chart (Appendix C)

The Graduate Skills and Abilities Chart was developed during a faculty workshop on February 11th, 2004 facilitated by the Curriculum Consultant.

The outcome of this workshop was a single, composite chart that outlines the graduate skills and abilities. The chart is the cross-referencing of: 1) the competencies identified in the Industry Occupational Analysis (DACUM) Chart and the College Wide Learning Outcomes (CWLOs), and 2) the teaching faculty’s assessment of what would constitute realistic learning expectations of the program. Each College-Wide Learning Outcome is imbedded at least once in the final chart and it is assumed that those skills will be represented throughout the curriculum, even when not stated specifically in each competency. This chart serves as the focus for curriculum renewal and the basis for the development of program learning outcomes.

Graduate Profile (Appendix D)

The Graduate Profile is a series of statements identifying the essential and enduring knowledge, skills, and abilities that make up the integrated learning expected of a graduate of a program. Through the use of the *Graduate Skills and Abilities Chart*, the profile was developed at a faculty workshop facilitated by the Curriculum Consultant and the Curriculum Validation Facilitator on March 31st, 2004.

Graduate Profile and Canadian Association of Medical Radiation Technologists (CAMRT) Competencies Comparison (Appendix E)

The Graduate Profile and CAMRT Competencies Comparison is an added deliverable included to help prepare the program for an upcoming accreditation review in the 2004 – 2005 Academic Year. This comparison was completed by the Curriculum Consultant, the Program Chair, and the Program Coordinator during a meeting held on April 15th,

2004. This comparison was later vetted and fine-tuned by the faculty at a workshop facilitated by the Curriculum Consultant on April 28th, 2004

Program Renewal Plan (Appendix F)

The program renewal plan is the result translating the preceding deliverables into a coherent plan for the renewal of the program.

For the Medical Radiologic Technology Curriculum Validation – Program Renewal, the program Chair opted for a visioning workshop with faculty that was held on April 7th, 2004. The resulting vision statements provide the program’s Chair with direction as they create a future vision for the program. The question central to the visioning process is: “In three to five years, the Medical Radiologic Technology Program will be a leading contributor to the field. What will be the key characteristics and features of the program?”

For details on the implementation tasks related to the goals, please see Appendix F.

Medical Radiologic Technology Program – Vision Statements

In the next five years, the Medical Radiologic Technology program will continue its commitment of surpassing established standards of excellence by providing a nationally recognized, challenging, relevant and current curriculum that prepares graduates for a high degree of commitment to patient care, the ability to respond to the changing demands in technology and meet the requirements of the profession and demands of employers.

The Medical Radiologic Technology program has developed goals in five areas to realize its vision.

1. Students

Provide an exceptional educational environment that will enable learners to develop strong patient care, academic and technological, skills which will prepare them to become effective problem solvers, capable communicators and life long learners.

2. Curriculum

The curriculum will be challenging, based upon a core of knowledge, and promote higher level thinking.

3. Instructors

Ensure that clinical and didactic instructors are current and competent in Imaging technology, personalized patient care and exemplary educational practices.

4. Clinical

Provide supportive and outstanding clinical learning environments for students that adhere to the philosophy of excellence in education.

5. Equipment and Resources

Ensure that sufficient facilities, staffing and resources are available for the program to achieve its vision.

5-Year Program Renewal Plan in Gantt Chart Format (Appendix G)

The 5-Year Program Renewal Plan in Gantt Chart format was developed by the program Chair and the Curriculum Consultant and is the culmination of the Curriculum Validation – Program Renewal Process. This chart provides the program Chair with a planned process for program renewal and benchmarks against which that renewal can be measured and tracked.

Conclusion

The outcomes of the Curriculum Validation – Program Renewal process indicate that the Medical Radiologic Technology Program is committed to continuous improvement measures in pursuit of quality assurance. The Curriculum Validation – Program Renewal process has provided the Chair of Medical Radiologic Technology, Advisory Committee Members and faculty with a set of program renewal goals for the next 5 year period that will continue the program's commitment to quality assurance in curriculum and will ensure that the Medical Radiologic Technology Program is recognized as a leader in its field.

Appendix A - Environmental Scan and Key Findings

Institution: Red River College	
Contact Information:	
<i>Address:</i> 2055 Notre Dame Avenue Winnipeg, MB R3H 0J9	<i>Website:</i> <i>Contact Person:</i> Irene Chaudhary <i>Telephone:</i> (204)632-2311/2241 <i>Fax:</i> (204) 632-4859 <i>Email:</i> ichaudhary@rrc.mb.ca
Size of Program:	
<i>Number of faculty:</i> <ul style="list-style-type: none"> • 1 clinical • 3 didactic • 5 clinical (partnerships) 	<i>Number of students:</i> Year 1 – 20 Year 2 - 22
Credential Issued:	
Diploma	
Program Features:	
<i>Length:</i> 24 consecutive months with predetermined breaks and a graduation in September; 37 weeks - didactic 56 weeks - clinical 5x 1-4 week breaks <i>Entrance Requirements:</i> <ul style="list-style-type: none"> • 27 credit hours of post-secondary education including Introduction to Physics (6 credits), Structure and Modeling in Chemistry (3 credits), Anatomy and Physiology (6 credits), Introduction to Sociology (6 credits), Basic Statistical Analysis (3 credits), and Communications (3 credits) and <ul style="list-style-type: none"> • Attendance at a program information session conducted by the Medical Radiologic Technology Department and • Completion of a minimum three days of occupational familiarization (an observation experience) to the Medical Radiologic Technology profession at a hospital or x-ray clinic (to be arranged by RRC) and • Submission of a completed Red River College Immunization Records form • After notice of acceptance, evidence of current certification in Standard First Aid and Basic Rescuer level of CPR is required 	<i>Special Admission Requirement:</i> Applicants who will be at least 18 years of age on or before September 30 in their year of registration who do not meet the regular admission requirements may apply under the special admission criteria <i>Graduation Requirement:</i> <ul style="list-style-type: none"> • Successful completion of all program courses within required time • Graduates are eligible to write the CAMRT exam
Curriculum Model:	
<i>Delivery Model (Classroom):</i> <ul style="list-style-type: none"> • Lecture • Labs • Guided practice • Demonstrations • Group work 	<i>Experiential Component (Clinical):</i> <ul style="list-style-type: none"> • Work on patients • Quality control on equipment • Seminars • Limited classroom work
Curriculum Content:	
Year 1 <ul style="list-style-type: none"> • Human/Workplace Relations (2) • Medical Terminology (0) • Computer Fundamentals (0) • Radiographic Anatomy (2) • Radiographic Technique (3) • Image Recording 1 (3) 	Year 2 <ul style="list-style-type: none"> • Clinical Practice 2 (11) • Clinical Practice 3 (19) • Clinical Practice 4 (12)

Institution: Red River College																																				
<ul style="list-style-type: none"> • Patient Care 1 (3) • Physics for MRT (3) • Radiographic Pathology for Medical Radiologic Tech (2) • Radiobiology and Protection (3) • Radiographic Technique 2 (3) • Image Recording 2 (3) • Patient Care 2 (3) • Clinical Practice 1 (0) • Radiation Science and Apparatus 1 (3) • Radiation Science and Apparatus 2 (2) • Computed Tomography & Sectional Anatomy (2) • Management Practices (2) • Radiation Science And Apparatus 3 (2) 																																				
<i>Course Outlines:</i> Available at website																																				
Student Assessment:																																				
<i>Assessment:</i> <ul style="list-style-type: none"> • Letter grades • Pass/Fail • Percentage grade 	<i>Skills Assessment:</i> Year 2 – clinical practice with a minimum pass mark of 65%																																			
Year 1 – didactic courses with minimum pass mark of 60% <i>Grading Scale:</i>	<i>Assessment practices for clinical:</i> 65% minimum pass mark; combination of assessment tools including use of performance checklists, demonstrations																																			
<table border="1"> <thead> <tr> <th>% Range</th> <th>Letter Grade</th> <th>GPA</th> </tr> </thead> <tbody> <tr> <td>90-100</td> <td>A+</td> <td>4.5</td> </tr> <tr> <td>80-89</td> <td>A</td> <td>4.0</td> </tr> <tr> <td>75-79</td> <td>B+</td> <td>3.5</td> </tr> <tr> <td>70-74</td> <td>B</td> <td>3.0</td> </tr> <tr> <td>65-69</td> <td>C+</td> <td>2.5</td> </tr> <tr> <td>60-64</td> <td>C</td> <td>2.0</td> </tr> <tr> <td>0-59</td> <td>F</td> <td>0</td> </tr> <tr> <td>N/A</td> <td>Pass</td> <td>N/A</td> </tr> <tr> <td>N/A</td> <td>Credit</td> <td>N/A</td> </tr> <tr> <td></td> <td>Did Not Write</td> <td></td> </tr> <tr> <td></td> <td>Incomplete</td> <td></td> </tr> </tbody> </table>		% Range	Letter Grade	GPA	90-100	A+	4.5	80-89	A	4.0	75-79	B+	3.5	70-74	B	3.0	65-69	C+	2.5	60-64	C	2.0	0-59	F	0	N/A	Pass	N/A	N/A	Credit	N/A		Did Not Write			Incomplete
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N/A	Credit	N/A																																		
	Did Not Write																																			
	Incomplete																																			
Current and Coming Challenges:																																				
<i>Content including employability skills, inclusiveness, global orientation:</i> <ul style="list-style-type: none"> • Communication between didactic and clinical instructors • Increasing enrolment of males 	<i>Assessment Practices:</i> <ul style="list-style-type: none"> • Clinical sites are not following one standardized format of instruction, assessment and evaluation 																																			
<i>Delivery of the Program:</i> <ul style="list-style-type: none"> • Wide range of technology makes it difficult to deliver materials in time frame • Instructors are at different clinical sites • Employer expectations for instructors at the college and clinical sites • Funding ability to hire term instructors (remuneration is too small) • Staffing for substitute, sick and replacement instructors 	<i>Instructional Technology:</i> <ul style="list-style-type: none"> • Money needed to purchase up-to-date equipment • Need for computer radiography equipment so students can have sufficient practice time 																																			
Curriculum Renewal:																																				
<i>Process:</i> <ul style="list-style-type: none"> • Curriculum validation process 	<i>Frequency:</i> <ul style="list-style-type: none"> • Every five years at college level 																																			

Institution: Red River College	
Partnerships:	
<i>Health Centres:</i> <ul style="list-style-type: none"> • Brandon Regional Health Authority, Brandon • Interlake Regional Health Authority, Selkirk • Central Regional Health Authority, Portage La Prairie • South Eastman Regional Health Authority, Steinbach • Winnipeg Regional Health Authority (Grace General Hospital, Children's Hospital, Health Sciences Centre, St. Boniface General Hospital) 	<i>Post-Secondary:</i> The Marine Institute of Memorial University of Newfoundland where students can transfer courses to continue studies to earn a Bachelor of Technology.
<i>Other:</i> Students are members of CAMRT in year 2 of training	
Other:	
<i>Accreditation:</i> Status: 6-year Expiry date: 2005/02/28	<i>Books & Supplies:</i> Year 1 - \$2,200
<i>Program/Student Fees:</i> Canadian students: Year 1 – \$2,499 Year 2 – \$2,660	<i>Other fees:</i> Year 1 - \$224 Year 2 - \$450
Comments:	

Institution: Northern Alberta Institute of Technology	
Contact Information:	
<p><i>Address:</i> 11762 106th Street NW Edmonton, AB T5G 2R1</p>	<p><i>Website:</i> www.nait.ab.ca <i>Contact Person:</i> Mrs. Helen Peters <i>Telephone:</i> (780) 471-8468/7400 <i>Fax:</i> (780) 471-8522 <i>Email:</i> helenp@nait.ab.ca</p>
Size of Program:	
<p><i>Number of faculty:</i></p> <ul style="list-style-type: none"> • Faculty: 8 • Admin support – 1.5 	<p><i>Number of students:</i></p> <ul style="list-style-type: none"> • Junior year (semesters 1 & 2): 29 • Senior year (semesters 3, 4, 5): 44 • Special students: 1
Credential Issued:	
Diploma in Medical Radiologic Technology	
Program Features:	
<p><i>Length:</i> 21 consecutive months 94 weeks in 5 semesters</p> <p><i>Entrance Requirements:</i> Academic</p> <ul style="list-style-type: none"> • Alberta High School Diploma or equivalent with 60% or better in English 30, Math 30 or 31 or 33 or Pure Math 30 or Applied Math 30; Physics 30; and one of either Biology 30 or Chemistry 30 or Sciences 30. (Biology 30 is a recommended subject for students to take in order to better prepare them for MRT103 course content). • Basic computer skills: word processing, presentation skills (power point), email usage and basic knowledge of spreadsheets • Career Investigation Report (with an application form) by March 31st. This form is specific to the Medical Radiologic Technology program. The Career Investigation Report is marked out of a possible 30% as part of the selection process. <p>Non academic</p> <ul style="list-style-type: none"> • Vaccines for Hepatitis B, red measles, current First Aid and CPR Level C certificate • Criminal record check (for clinical training site) 	<p><i>Special Admission Requirement:</i> International students</p> <ul style="list-style-type: none"> • Demonstrated English language proficiency or TOEFL (mark of 230 or greater) and pass the TSE (mark of 40 or greater), as well as obtaining the required English 30 prerequisite <p><i>Graduation Requirement:</i></p> <ul style="list-style-type: none"> • Successful completion of the program allows the student to be eligible for registration and employment as a registered technologist in Alberta • This program is accredited with the Canadian Medical Association • Diploma graduates from the NAIT/SAIT Medical Radiologic Technology programs in Alberta will have continued access to the CAMRT certification examination until January 1, 2010
Curriculum Model:	
<p><i>Delivery Model:</i></p> <ul style="list-style-type: none"> • Traditional classrooms are used for lectures • The X-Ray labs are fully equipped with X-Ray machines that use automatic collimation, film processors, phantoms, quality control test equipment, film storage systems and a darkroom 	<p><i>Experiential Component (Clinical):</i> Co-op and work experience: practicum includes comprehensive review of student's theoretical knowledge through quizzes, worksheets, case studies and exams</p>

Institution: Northern Alberta Institute of Technology

Unique delivery features

- Faculty use computers
 - Students are not required to purchase computers but must use them (computer lab is open 24 hours /day)
 - Common classroom for X-Ray techs has a computer which students can access
 - Computer software include Internet, MS Office
 - Working toward using WebCT for distributed learning
- Currently using email communication for self study distance education courses

Curriculum Content:

Course Titles and Credit Hours:

Semester 1

- Physics
- Medical Terminology
- Introduction to Radiography
- Anatomy and Physiology for Medical Radiological Technology Students
- Radiation Science and Apparatus I
- Radiobiology and Protection I
- Image Exposure and Processing
- Radiographic Anatomy I
- Radiographic Technique I – Theory
- Radiographic Technique I – Practical
- Patient Care in Radiography I

Semester 2

- Infection Control and Safety
- Introduction to Research Methodologies
- Working in Health Care
- Radiation Science and Apparatus II
- Radiobiology and Protection II
- Quality Control
- Radiographic Technique II – Theory
- Radiographic Technique II – Practical
- Patient Care in Radiography II
- Clinical Radiography I

Semester 3

- Capstone I
- Radiographic Pathology I
- Radiographic Technique IV – Systems
- Radiographic Technique III – Trauma
- Clinical Radiography II

Semester 4

- Capstone II
- Computed Tomography Procedures and Sectional Anatomy II
- Radiographic Pathology II
- Radiographic Technique V – Systems
- Clinical Radiography III

Semester 5

- Capstone III
- Clinical Radiography IV
- Clinical Radiography V

Course Outlines: Available at website

Student Assessment:

Content theory:

- Exams
- Quizzes
- Assignments
- Presentations

Practical labs:

- Practical exams

Grading Scale:

- Pass/Fail
- Letter grade
- Percentages

Clinical

- Evaluation of competencies
- Weekly preceptor evaluation
- Semester summative evaluation
- Case studies
- Lab quizzes

Current and Coming Challenges:

Content:

- CT increasing focus in base curriculum
- Continued request from employers for “soft skills” (students dislike the courses)

Assessment Practices:

- None at this time

Delivery of the Program:

- Sequence

Instructional Technology:

- WebCT
- Currently exploring the use of PDA’s (personal data assistants) to track competency completion

Institution: Northern Alberta Institute of Technology	
Curriculum Renewal:	
<i>Process:</i> Continuous review and improvement to meet accreditation standards	<i>Frequency:</i> No specified frequency
Partnerships:	
<i>Health Centres:</i> Capital Health Region <ul style="list-style-type: none"> • Alberta Children's Hospital (Calgary) • Foothills Medical Centre (Calgary) • Peter Lougheed Centre (Calgary) • Rockyview General Hospital (Calgary) Capital Health Authority <ul style="list-style-type: none"> • North East Community Health Centre (Edmonton) • Royal Alexandria Hospital (Edmonton) • Sturgeon Community Hospital and Health Centre (St Albert) • University of Alberta Hospital, Walter McKenzie Health Sciences Centre (Edmonton) Caritas Health Group <ul style="list-style-type: none"> • Grey Nuns Hospital and Health Centre (Edmonton) • Misericordia Community Hospital and Health Centre (Edmonton) David Thompson Health Region Red Deer Regional Hospital (Red Deer)	<i>Post-Secondary:</i>
<i>Other:</i>	
Other:	
<i>Accreditation:</i> Status: Accredited. Program has not consented to disclosure of accreditation status	<i>Books, Supplies and Program Fees::</i> CDN \$2,825
<i>Tuition Fees:</i> Canadian students: CDN \$1,1517.48 per semester International students: international students are not accepted at this time	<i>Other fees:</i>
Comments:	
<ul style="list-style-type: none"> • Delivery of a provincial curriculum and program model with SAIT • Alberta model -One program, two sites • NAIT-MRT program went through significant changes in the last few years related to actions of provincial steering committee which was established to review all DI education in Alberta • Changes have included: <ul style="list-style-type: none"> • new programs, increased student numbers, moving hospital based student programs to educational institutions • Many new training partners (practicum) involved provincially 	

Institution: Southern Alberta Institute of Technology	
Contact Information:	
<i>Address:</i> 1301-16 th Avenue N.W. Calgary, AB T2M 0L4	<i>Website:</i> www.sait.ab.ca <i>Contact Person:</i> Heather Ahl Academic coordinator <i>Telephone:</i> (403)284-8575 <i>Fax:</i> Not available <i>Email:</i> Heather.ahl@sait.ca
Size of Program:	
<i>Number of faculty:</i> <ul style="list-style-type: none"> • 3 instructors • 1 clinical practicum liaison 	<i>Number of students:</i> 24 in each of two years (second year classes have not yet started due to newness of program)
Credential Issued:	
Diploma	
Program Features:	
<i>Length:</i> Twenty one months – Fall start date <i>Entrance Requirements:</i> <ul style="list-style-type: none"> • Alberta High School Diploma or equivalent with a minimum of 60% in each of English 30; Pure Math 30, Applied Math 30, or Math 31; Chemistry 30; or Biology 30 or Science 30, Physics 30 • English Proficiency • Current Basic Rescuer (Level C) CPR to Alberta Heart and Stroke Foundation Standards • Updated Immunization Records • Security Clearance: By law the practicum sites require that students obtain a security clearance report prior to going on practicum 	<i>Special Admission Requirement:</i> N/A <i>Graduation Requirements:</i> <ul style="list-style-type: none"> • To progress through the program, students must attain a GPA of 2.15 or better in each semester • Graduates from this program I receive a SAIT diploma in Medical Radiologic Technology. • Graduates will be eligible for registration as registered technologists in Alberta. • As of June 2003, access to the Canadian Medical Radiation Technologies (CAMRT) certification exam has been confirmed. • Graduates receive credits towards the 120-credit B.Sc. (Human Science) degree program at Athabasca University. • Candidates interested in becoming MRI Technologists will be eligible to apply to the British Columbia Institute of Technology (BCIT), NAIT, or Red River College MRI programs after completion of this program.
Curriculum Model:	
<i>Delivery Model:</i> <ul style="list-style-type: none"> • Classroom lectures and laboratory experiences • Some courses offered by correspondence. 	<i>Experiential Component (Clinical):</i> <ul style="list-style-type: none"> • Clinical practicum on completion of 4 months in the classroom • Year 2 spent in clinical practicum with integrated alternative delivery courses (beginning of may till the end of May the following year)
<i>Unique Delivery features:</i> <ul style="list-style-type: none"> • Students do not have to purchase their own laptop • Students take 5 courses by distributed learning (currently paper format) during their clinical practicum 	
Curriculum Content:	
<i>Course Titles and Credit Hours:</i> Year 1 Semester 1 – 16 weeks <ul style="list-style-type: none"> • *Anatomy and Physiology (5) • Health Sciences and Computer Fundamentals (3) • *Medical Terminology (1.5) • Physics for Radiography (2) • Intro to Radiography (1) 	Semester 3 – 16 weeks <ul style="list-style-type: none"> • PRAC Clinical Radiography II (17) • Radiographic Pathology I (1) • Radiographic Tech III – Systems (1) • Radiographic Tech V – Trauma (1) Clinical Radiographic Integration II (3.5)

Institution: Southern Alberta Institute of Technology

- Radiation Science & Apparatus I (3)
- Radiobiology & Protection (1)
- Image Exposure & Processing I (3.5)
- Radiographic Anatomy I (3)
- Radiographic Tech I – Theory (2.5)
- Radiographic Tech I – Laboratory (2)
- Patient Care I (2)

Semester 2 – 16 weeks

- Clinical Radiography I (4 wks) (5)
- Human/Workplace Relations (3)
- Health Care Communications (2)
- *Infection Control and Safety (1.5)
- Intro to Research Methodologies (1)
- Radiation Science and Apparatus II (1.5)
- Radiobiology and Protection II (1)
- Quality Control I (2.5)
- Radiographic Tech II –Theory (2.5)
- Radiographic Tech II – Laboratory (2.5)
- Patient Care II (1.5)

Year 2

Semester 4

- PRAC Clinical Radiography III (17)
- Radiographic Pathology II (1)
- Radiographic Tech IV – Systems (1)
- Clinical Radiography Integration III (3.5)

Semester 5

- PRAC Clinical Radiography IV (17.5)
 - Clinical Radiography Integration IV (3)
 - CT Procedures & Sectional Anatomy (2)
 - PRAC 35X Clinical Radiography V (5)
- *Available by correspondence. The courses must be completed within the time frame shown in the program outline.

Course Outlines: Available at website

Student Assessment:

Content theory:

- Written exams

Practical labs:

- Written exams
- Practical competency assessments

Grading Scale:

- Letter grade that converts to GPA for progression

Clinical:

- Various tools used in second year to assess students
- Students challenge competencies for their logbook with lead preceptors, site liaisons or practicum liaisons
- Students accessed weekly by preceptors on overall process
- Clinical practicum liaison assesses students progress individually to monitor progress
- Students complete weekly goal sheets
- At end of each semester, practicum liaison creates a progress report for each student

Current and Coming Challenges:

Content:

- Program was just redesigned to be a shorter program (the NAIT curriculum)
- Currently working through the implementation of the new model

Assessment Practices:

- Many tech working at clinical sites are not convinced that students can be sufficiently competent in shortened time period

Delivery of the Program:

- Practicum component was shortened from 16 to 13 months

Instructional Technology:

- Future development of online, streamlined assessment tools
- Move distance delivery courses to WebCT
- Degree issue is a big one for college – Alberta government is very adamant that degree as entry to practice is NOT required

Curriculum Renewal:

Process:

Since this is a new program, it is following the NAIT model

Frequency:

Partnerships:

Health Centres:

- 2 regional health authorities
- Several community Diagnostic Imaging clinics

Post-Secondary:

- NAIT- one program, two sites

Institution: Southern Alberta Institute of Technology	
<i>Other:</i>	
Other:	
<i>Accreditation:</i> Status: Applied for accreditation. Expiry date: Visit is scheduled for December 2004	<i>Student and other fees:</i> CDN\$1,436
<i>Tuition and Student Fees:</i> Canadian students: Year 1 - \$5,772 Year 2 - \$3,651 International students: Due to the practicum component, international students are not accepted	<i>Books, Supplies and Program fees:</i> Year 1 - \$2,000 Year 2 - \$ 900 Basic Rescuer and CPR - \$75 CAMRT certification - \$450
Comments:	
<ul style="list-style-type: none"> • Program limited to 24 students per year due to limited clinical sites to accommodate students 	

Institution: British Columbia Institute of Technology	
Contact Information:	
<i>Address:</i> 3700 Willington Avenue Burnaby, BC V5G 3H2	<i>Website:</i> www.bcit.ca <i>Contact Person:</i> Mrs. Mary Filippelli <i>Telephone:</i> (604) 451-6918 <i>Fax:</i> (604) 436-4937 <i>Email:</i> mfilippe@bcit.ca
Size of Program:	
<i>Number of faculty:</i> 11 (depending on term)	<i>Number of students:</i> Junior year: 54 Intermediate year: 48 Senior year: 45
Credential Issued:	
Diploma	
Program Features:	
<i>Length:</i> Two and a half years beginning in January each year. There is a three month break (June-August) after the first level. <i>Entrance Requirements:</i> <ul style="list-style-type: none"> • High school graduation • Minimum of 40 hours volunteer work in a hospital environment • Basic Life Support - Level 3 • Complete immunization record • Medical exam • Preadmission interview 	<i>Special Admission Requirement:</i> <i>Graduation Requirement:</i> <ul style="list-style-type: none"> • Successful completion of all didactic and clinical portions of the program • Graduates are eligible for registration with CAMRT
Curriculum Model:	
<i>Delivery Model:</i> Didactic: Lectures and demonstrations	<i>Experiential Component:</i> <ul style="list-style-type: none"> • Applied labs including imaging information and film diagnosis • Guided practice
<i>Unique delivery features:</i> Lecture notes are placed on student website	
Curriculum Content:	
<i>Course Titles and Credit Hours:</i>	
Level 1 – 15 weeks <ul style="list-style-type: none"> • Anatomy & Physiology 1 (MRAD) (2) • Human Behaviour (2.5) • Medical Imaging (3) • Radiographic Anatomy & Physiology 1 (3) • Radiographic Procedures 1 (10) • Clinical Orientation (3) • Clinical Education 1* (5.5) • Patient Care 1 (MRAD) (2) • Physics: Medical Radiography 1 (3.5) *In Hospital for 4 weeks (35 hr/wk) in May	Level 3 – 16 weeks <ul style="list-style-type: none"> • Communication for Medical Radiographers (2) • Radiation Biology & Protection (1.5) • Special Procedures (1.5) • Radiographic Anatomy & Physiology 3 (3) • Case Studies 2 (2) • Radiographic Procedures 3 (8) • Pathology 2 (4) • Medical Imaging 3 (2.5) • Physics: Medical Radiography 3 (2)
Level 2 – 15 weeks <ul style="list-style-type: none"> • Anatomy & Physiology 2 (MRAD) (2) • Clinical Education 2 (10.5) • Radiographic Anatomy & Physiology 2 (2) • Case Studies 1 (1) • Radiographic Procedures 2 (4) • Pathology 1 (2) • Medical Imaging 2 (1) • Patient Care 2 (MRAD) (2.5) • Physics: Medical Radiography 2 (1.5) 	Level 4 – 31 weeks <ul style="list-style-type: none"> • Clinical Education 4 (43) Level 5 – 17 weeks <ul style="list-style-type: none"> • Clinical Education 5 (24)
<i>Course Outlines:</i> Available at website	

Institution: British Columbia Institute of Technology	
Student Assessment:	
<i>Content theory:</i> All didactic courses require a minimum pass mark of 60%	<i>Clinical</i> Clinical experience is graded by satisfactory/unsatisfactory
<i>Practical labs:</i>	
<i>Grading Scale:</i>	
Current and Coming Challenges:	
<i>Content:</i> <ul style="list-style-type: none"> More space needed for clinical placements 	<i>Assessment Practices:</i>
<i>Delivery of the Program:</i> <ul style="list-style-type: none"> No financial concerns 	<i>Instructional Technology:</i>
Curriculum Renewal:	
<i>Process:</i> <ul style="list-style-type: none"> Information gathered is based on provincial requirements (does not consider programs from other provinces) Usually gather a provincial group of practitioners who are provided course outlines and give feedback Meetings are planned with practitioners to discuss comments and prepare a final report 	<i>Frequency:</i> <ul style="list-style-type: none"> Every 5-6 years depending on funding Use of rotational method with health
Partnerships:	
<i>Health Centres:</i> Fraser Health Authority <ul style="list-style-type: none"> Burnaby Hospital, Burnaby Eagle Ridge Hospital, Port Moody Matsqui-Sumas-Abbotsford Hospital, Abbotsford Royal Columbian Hospital, New Westminster Surrey Memorial Hospital, Surrey Interior Health Authority <ul style="list-style-type: none"> Kelowna General Hospital, Kelowna Royal Inland Hospital, Kamloops Northern Health Authority <ul style="list-style-type: none"> Prince George Regional Hospital, Prince George 	Vancouver Coastal Health Authority <ul style="list-style-type: none"> British Columbia Children's and Women's Hospital, Vancouver Lions Gate Hospital, North Providence Health Group, St. Paul's Hospital Richmond General Hospital, University of British Columbia Hospital Vancouver General Hospital, Vancouver Vancouver Island Health Authority <ul style="list-style-type: none"> Royal Jubilee Hospital, Victoria Victoria General Hospital, Victoria
<i>Other:</i>	
Other:	
<i>Accreditation:</i> Status: 6 year Expiry date: 2006/05/31	<i>Student and other fees:</i>
<i>Tuition and Student Fees:</i> Canadian students – \$147 per credit to a maximum of \$2,040 per level International students are accepted depending on space but to date there is no space	<i>Books and Supplies:</i> Level 1: \$1,000 Levels 2 and 3: \$400 Levels 4 and 5: \$500
Comments:	
<ul style="list-style-type: none"> BCIT is a degree granting institution so the transition to combined diploma/degree program is easier Graduates will be granted a Bachelor of Science in Medical Imaging 	

Institution: College of the North Atlantic	
Contact Information:	
<p><i>Address:</i> Prince Phillip Drive Campus PO Box 1693 St John's, NF A1C 5P7</p>	<p><i>Website:</i> www.northatlantic.nf.ca <i>Contact Person:</i> Dr. Donna Henderson <i>Telephone:</i> (709) 758-7676 <i>Fax:</i> (709) 758-7634 <i>Email:</i> dhenderson@northatlantic.nf.ca</p>
Size of Program:	
<p><i>Number of faculty:</i></p> <ul style="list-style-type: none"> • 2 didactic instructors in second year • 2 clinical instructors for third year employed by the Health Care Corporation of St. John's 	<p><i>Number of students:</i> 12 in each of second and third years</p>
Credential Issued:	
Diploma	
Program Features:	
<p><i>Length:</i> 3 years with a start date of September</p> <p><i>Entrance Requirements:</i></p> <ul style="list-style-type: none"> • High school graduation with an average of at least 60%, or • Adult Basic Education Graduation Certificate with an average of at least 60%, or • Applicants who do not meet the requirement and are at least 19 years or older may be considered • Selection for the third semester is competitive (occur at the end of the second semester) 	<p><i>Special Admission Requirement:</i></p> <p><i>Graduation Requirements:</i></p> <ul style="list-style-type: none"> • GPA of at least 2.0 and pass in all courses • St John's Ambulance Emergency First Aid Certificate • Basic CPR Certificate • Students who graduate before January 1, 2005, will receive a diploma from the College and will be considered eligible to write the examinations set by the Canadian Association of Medical Radiation Technologists for national certification
Curriculum Model:	
<p><i>Delivery Model:</i> Combination of lectures, demonstrations, observations, labs, guided practice</p> <p>First year: Academic – combining general and specialized subjects; second year is specialized with focus on Medical Radiography; classroom and labs supplemented with weekly assignments at the Health Care Corporation of St John's.</p>	<p><i>Experiential Component:</i> Clinical phase: Consists of three semesters of training (rotation) at four sites of the Health Carte Corporation of St John's</p>
<p><i>Unique delivery features:</i></p> <ul style="list-style-type: none"> • Laptops are not used in the program • Program does not have distributed practices 	
Curriculum Content:	
<p><i>Course Titles and Credit Hours:</i></p> <p>Semester 1</p> <ul style="list-style-type: none"> • Chemistry (4) • Communication Skills (3) • Mathematics (4) • Physics (4) • Biology (4) <p>Semester 2</p> <ul style="list-style-type: none"> • Biology (4) • Statistics (4) 	<p>Semester 5</p> <ul style="list-style-type: none"> • Radiographic Technique (5) • Image Recording (4) • Apparatus & Accessories (5) • Radiation Protection & Radiobi (3) • Radiographic Anatomy (3) • Clinical Orientation (0) <p>Semester 6</p> <ul style="list-style-type: none"> • Clinical Radiography I (16)

Institution: College of the North Atlantic	
<ul style="list-style-type: none"> • Physics (3) • Chemistry (4) <p>Semester 3</p> <ul style="list-style-type: none"> • Biology (2) • Physics (2) • Psychology 1 (2) • Productivity Tools (4) <p>Semester 4</p> <ul style="list-style-type: none"> • Clinical Orientation (0) • Physics (3) • Radiographic Anatomy (3) • Patient Care (3) • Radiographic Technique (5) • Image Recording (5) • Apparatus & Accessories (3) 	<p>Semester 7</p> <ul style="list-style-type: none"> • Clinical Radiography II (16) <p>Semester 8</p> <ul style="list-style-type: none"> • Clinical Radiography III (16)
<i>Course Outlines:</i> Available at website	
Student Assessment:	
<p><i>Content theory:</i></p> <ul style="list-style-type: none"> • Quizzes • Formal exams 	<p><i>Clinical</i></p> <p>Written exams and clinical evaluation by clinical instructors and preceptors</p>
<p><i>Practical/labs:</i></p> <ul style="list-style-type: none"> • Lab exams (written) • Practical exams 	
<p><i>Grading Scale:</i></p> <ul style="list-style-type: none"> • Percentage • Pass/fail for clinical 	
Current and Coming Challenges:	
Program was recently revised to meet the needs of the clinical partners	
Curriculum Renewal:	
<p><i>Process:</i></p> <p>As required</p>	<p><i>Frequency:</i></p> <p>As required</p>
Partnerships:	
<p><i>Health Centres:</i></p> <p>Health Care Corporation of St John's</p> <ul style="list-style-type: none"> • St Clare's Mercy Hospital Site, St. John's • The General Hospital, St. John's • The Janeway Child Health Centre, St. John's 	<p><i>Post-Secondary:</i></p> <p>Memorial University where students can obtain a Bachelor of Technology in one year</p> <p><i>International</i></p> <p>Establishing Qatar campus where programs offered in NF will be duplicated</p>
Other:	
<p><i>Accreditation:</i></p> <p>Status: 6 year</p> <p>Expiry date: 2004/10/31</p>	<p><i>Tuition and Student Fees:</i></p> <p>Canadian students: Information not available</p> <p>International students – \$3,000 per semester</p>
Comments:	
International students are accepted if there is space in the program – there has never been space	

Institution: Mohawk College of Applied Arts and Technology	
Contact Information:	
<i>Address:</i> 1400 Main Street W Hamilton, ON L8S 1C7	<i>Website:</i> www.mohawkcollege.ca <i>Contact Person:</i> Mrs. Diane Barrafato <i>Telephone:</i> (905) 540-4247 Ext:26745/26770 <i>Fax:</i> (905) 528-4198 <i>Email:</i> diane.barrafato@mohawkcollege.ca
Size of Program:	
<i>Number of faculty:</i> Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004	<i>Number of students:</i> Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004
Credential Issued:	
Collaborative diploma/degree (through Mohawk-McMaster Institute for Applied Health Sciences) with Bachelor of Science in Medical Radiation Sciences effective 2004	
Program Features:	
<i>Length:</i> Four years with September start date <i>Entrance Requirements:</i> <ul style="list-style-type: none"> • Completion of the Ontario Secondary School Diploma (or equivalent) • Up to date immunization record • CPR Level C Certificate before clinical placement 	<i>Special Admission Requirement:</i> <i>Graduation Requirements:</i> <ul style="list-style-type: none"> • Successful completion of didactic and clinical components of program
Curriculum Model:	
<i>Delivery Model:</i> <ul style="list-style-type: none"> • Lectures and labs for the didactic portions of program 	<i>Experiential Component:</i> <ul style="list-style-type: none"> • Clinical placement
<i>Unique delivery features:</i>	
Curriculum Content:	
<i>Course Titles and Credit Hours:</i> Level 1 <ul style="list-style-type: none"> • Biology (3) • Calculus (3) • Chemistry (3) • Human Anatomy & Physiology (6) • Medical Imaging (Introduction) (3) • Pathology (3) • Physics (3) • Statistics (3) • Elective (3) 	Second to Fourth Levels <ul style="list-style-type: none"> • 22 units of required university courses • 63 units of discipline-specific courses in radiation physics, safety, radiation biology, human anatomy and pathology, radiographic equipment, radiographic imaging procedures, film analysis and film interpretation, introduction to computed tomography (CT scanning), magnetic resonance imaging (MRI), breast diagnosis and treatment • 50 units (weeks) clinical placements (minimum) at 2 two different sites
<i>Course Outlines:</i> Available at website	
Student Assessment:	
Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004	
Current and Coming Challenges:	
Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004	
Curriculum Renewal:	
Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004	

Institution: Mohawk College of Applied Arts and Technology**Partnerships:***Health Centres:*

- Credit Valley Hospital, Mississauga
- Grand River Hospital, Kitchener-Waterloo Health Centre Site, Kitchener
- Guelph General Hospital, Guelph
- Halton Health Care Services - Oakville - Trafalgar Memorial Hospital, Oakville
- Joseph Brant Memorial Hospital, Burlington
- Niagara Health System, St. Catharines
- General Hospital Site, St. Catharines
- Quinte HealthCare Corporation, Belleville
- General Hospital, Belleville
- St. Joseph's Healthcare, Hamilton
- The Ottawa Hospital, Civic Campus, Ottawa

Hamilton Health Sciences Corporation

- General Division, Hamilton
- McMaster University Medical Centre, Hamilton

Henderson Division, Hamilton

Post-Secondary:

Mc Master University

*Other:***Other:***Accreditation:*

Status: 2 year

Expiry date: 2005/02/28

Tuition and Student Fees:

Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004

Other Fees:

Information was not provided because it will be outdated by publication of this report due to the program transition to the diploma/degree option in September 2004

Comments:

Mohawk College believes that the combined diploma/degree program is in keeping with CAMRT requirement because it allows for Canadian MRT practitioners to continue to their reciprocity certification agreements with most European countries as well as several countries including Australia

Institution: The Michener Institute for Applied Health Sciences	
Contact Information:	
<i>Address:</i> 222 St. Patrick Street Toronto, ON M5T 1V4	<i>Website:</i> www.michener.ca <i>Contact Person:</i> Fiona Cherryman <i>Telephone:</i> (416) 596-3101 <i>Fax:</i> (416) 596-3168 <i>Email:</i> fcherryman@michener.ca
Size of Program:	
<i>Number of faculty:</i> <ul style="list-style-type: none"> • 6 fulltime didactic instructors • Clinical instructors are not represented as they are not under the college mandate 	<i>Number of students:</i> Year 1: 26 Year 2: 32
Credential Issued:	
Joint diploma/degree in Radiation Sciences (collaboration with University of Toronto faculty of Medicine)	
Program Features:	
<i>Length:</i> Four years <i>Entrance Requirements:</i> A minimum of one year (5 full credit course equivalents) of university education with a minimum of B- GPA (courses must include one (1) full course in Biology, one (1) full course in Mathematics, one (1) full course in Physics, EACH with a minimum grade of C-)	<i>Special Admission Requirement:</i> <i>Graduation Requirements:</i> Successful completion of all portions of program
Curriculum Model:	
<i>Delivery Model:</i> Didactic: lectures and labs <i>Unique delivery features:</i> Some courses are offered online	<i>Experiential Component:</i> Clinical placement of 48 weeks
Curriculum Content:	
<i>Course Titles and Credit Hours:</i>	
Year 1 <ul style="list-style-type: none"> • Anatomy • Physiology • Fundamental of Patient Care • Human Osteology • Radiation Science I • Radiographic Methodology I • Anatomy • Physiology • Imaging Modalities I • Introduction to Clinical Radiological Technology • Relational Anatomy • Radiographic Methodology II 	Year 2 cont'd <ul style="list-style-type: none"> • Introduction to Pharmacology • Research Methods I • Instrumental Digital Imaging • Health Care Systems • Clinical Practicum
Year 2 <ul style="list-style-type: none"> • Clinical Behaviour Science I • Imaging Modalities II • Systems Methodology • Pathology • Selective I • Clinical Behaviour Science II • Comparative Imaging Modalities 	Year 3 <ul style="list-style-type: none"> • Clinical Practicum II • Clinical Project I • Research Methods II • Clinical Practicum III • Clinical Project II • Research Methods II • Selective II, III, IV, V, & VI
<i>Course Outlines:</i> Available at website	

Institution: The Michener Institute for Applied Health Sciences	
Student Assessment:	
<i>Content theory:</i> Percentage and letter grade for didactic courses	<i>Clinical</i> Competence is graded on a Pass/Fail according to CAMRT standards
<i>Practical labs:</i>	
<i>Grading Scale:</i>	
Current and Coming Challenges:	
<ul style="list-style-type: none"> • College moved to degree program five years ago and that has adversely affected the number of applicants to the program • Difficulty marketing <i>new</i> degree program when Ontario students can still graduate with a diploma till 2010 (reprieve granted by CAMRT) • Unique status of program in that it is not a community college or a university but a public institution for Applied Health therefore the mandate is under the Department of Health rather than Department of Education; • Priority is with health and not with education • There has been no increase in funding for eleven years which causes difficulty • Program is truly integrated with University of Toronto and there are some difficulties melding policies of two separate organizations • Burden of faculty when it comes to collective agreements (faculty not employed by one organization but need to respect policies of other organization) • Moving to a higher level of curriculum design and trying to integrate some courses (establishing pre-requisites, co-requisites, etc) 	
Curriculum Renewal:	
<i>Process:</i> Joint courses: <ul style="list-style-type: none"> • Curriculum committee established consisting of students, faculty, multidisciplinary representatives from university and college to review content Program specific courses: <ul style="list-style-type: none"> • Program review committee established consisting of discipline specific clinical representatives and instructors to review content 	<i>Frequency:</i> Yearly
Partnerships:	
<i>Health Centres:</i> <ul style="list-style-type: none"> • Baycrest Centre for Geriatric Care, Toronto • Lakeridge Health Corporation, Oshawa Site, Oshawa • Mount Sinai Hospital, Imaging Department, Toronto • Peterborough Regional Health Centre, Peterborough • Royal Victoria Hospital, Barrie • St. Joseph's Health Centre, Toronto • St. Michael's Hospital, Toronto • Sunnybrook and Women's College Health Sciences Centre , Sunnybrook Campus, Toronto • The Hospital for Sick Children, Toronto • The William Osler Health Centre, Brampton Memorial Hospital Campus, Brampton • Toronto East General and Orthopaedic Hospital, Toronto • University Health Network, The Toronto 	<i>Post-Secondary:</i> University of Toronto

<i>Institution: The Michener Institute for Applied Health Sciences</i>	
General Site, Toronto <ul style="list-style-type: none"> • University Health Network, The Toronto Western Site, Toronto 	
<i>Other:</i>	
Other:	
<i>Accreditation:</i> Status: 6 year Expiry date: 2007/03/31	<i>Books and Supplies</i> Course notes - \$200 Textbooks – as per bookstore
<i>Tuition and Student Fees:</i> 2003/2004 year Canadian students: Academic fees – \$4,731 Non academic fees – \$916.96 International students: Academic fees – \$15,000 Non academic fees – \$916.96 Health Insurance – \$612.47	
Comments:	

Institution: Dawson College	
Contact Information:	
<i>Address:</i> 3040 Sherbrooke Street West Westmount, QC H3Z 1A4	<i>Website:</i> www.dawsoncollege.qc.ca <i>Contact Person:</i> Mary Anne Hoskin <i>Telephone:</i> (514) 931-8731 Ext.1357 <i>Fax:</i> <i>Email:</i> mahoskin@dawsoncollege.qc.ca
Size of Program:	
<i>Number of faculty:</i> <ul style="list-style-type: none"> • 5 full-time on campus • 5 part-time clinical • 1 full-time lab tech 	<i>Number of students:</i> Year 1: 80 Year 2: 26 Year 3: 18
Credential Issued:	
Diploma	
Program Features:	
<i>Length:</i> Three year program starting in September <i>Entrance Requirements:</i> <ul style="list-style-type: none"> • Diploma for secondary studies • Interview • Current immunization records • Medical certificate 	<i>Special Admission Requirement:</i> <i>Graduation Requirements:</i> <ul style="list-style-type: none"> • Successful completion of all didactic and clinical components of program with minimum pass mark of 60% • OTRQ qualifying exam (students do not have to write CAMRT exam to practice in Quebec) • OQLF - French language proficiency test to practice in Quebec • Graduates can apply for reciprocity from CAMRT
Curriculum Model:	
<i>Delivery Model:</i> <ul style="list-style-type: none"> • Years 1 & 2: didactic on campus with some small sections of clinical placements • Competency based with specified objectives • Role playing, Overheads, questions, discussions, seminars at hospitals, exam review, highly developed learning activities 	<i>Experiential Component:</i> <ul style="list-style-type: none"> • Year 3: clinical at hospital seminars,
<i>Unique delivery features:</i> <ul style="list-style-type: none"> • Instructors use laptops for instruction in lectures and demonstrations • 15 work stations in the Digital Imaging lab 	
Curriculum Content:	
<i>Course Titles and Credit Hours:</i>	
Year 1 <ul style="list-style-type: none"> • English • Humanities • French • Physical Education • Introduction to Radiology (Intensive in August including one week clinical) • Anatomy of Diagnostic Imaging • Physics of Radiology • Patient Care and Health Safety • Basic Radiographic Imaging • Biology of Radiology • Apparatus & Digital Imaging I • Image Quality • Radiography I (Extremities) 	Year 2 <ul style="list-style-type: none"> • English • Humanities • French (Complementary course) • Clinical 2 • Apparatus & Digital Imaging II • Radiography II (Trunk) • Radiography III (Skull) • Physical Education • Radiobiology & Protection • Radiography of Systems I • Radiography of Systems II • MRI/US/CT & Interventional • Clinical 3 (1.5 week intensive: Dec/Jan)

Institution: Dawson College	
	Year 3 <ul style="list-style-type: none"> • Clinical 4 (8.5 weeks) • Clinical 5 (8.5 weeks) • Clinical 6 (8.5 weeks) • Clinical 7 (.5 weeks) • Integration (Incl. Clinical 8)
<i>Course Outlines:</i> Available at website	
Student Assessment:	
<i>Content theory:</i> <ul style="list-style-type: none"> • Summative: Quizzes, lab reports, individual and group assessment, final exams • Student self-assess on professional conduct with instructor feedback on employability skills 	<i>Clinical</i> <ul style="list-style-type: none"> • Use of performance checklists by clinical instructors • CBL approach where students have to master a certain number of core competencies to be considered proficient in skill
<i>Skills Assessment:</i> <ul style="list-style-type: none"> • Weekly checklist • Projects • CBL checklist 	
<i>Grading Scale:</i> <ul style="list-style-type: none"> • Percentage grades with a minimum pass mark of 60% • Practical skills are graded by Pass/Fail 	
Current and Coming Challenges:	
<i>Content:</i> <ul style="list-style-type: none"> • No concerns about employability skills at this time as students are getting very good feedback from clinical sites • No concerns regarding age of students (average age is 27) • No concerns regarding ethnicity of students (good mix of ethnicities) 	<i>Assessment Practices:</i> <ul style="list-style-type: none"> • Digital Imaging as the future of MRT and more time to train students
<i>Delivery of the Program:</i> <ul style="list-style-type: none"> • Time to deliver content • Needs of the profession is very demanding with insufficient instruction time • RT's must be qualified to do MRI and Ultrasound but not enough hours in program to make student competent in skills • Insufficient clinical sites for student placements 	<i>Instructional Technology:</i> <ul style="list-style-type: none"> • Equipment replacement • Digital fluoroscopy equipment (students are only evaluated from theoretical point of view and gain practical experience during clinical placements) • Dedicated DR room • Money with no strings attached • Budgeting
Curriculum Renewal:	
<i>Process:</i> <ul style="list-style-type: none"> • Yearly or once a cohort of students have completed program • As needed • Prior to accreditation renewal 	<i>Frequency:</i> At least one major renewal/review every three years
Partnerships:	
<i>Health Centres:</i> <ul style="list-style-type: none"> • Montreal Children's Hospital, Montreal • Montreal General Hospital, Montreal • Royal Victoria Hospital, Montreal • St. Mary's Hospital Centre, Montreal • The Sir Mortimer B. Davis Jewish General Hospital, Montreal 	<i>Post-Secondary:</i> <ul style="list-style-type: none"> • Mc Gill University Health Centre
<i>Other:</i> Union: Students have to become members of OTRQ by second term	

Institution: Dawson College**Other:***Accreditation:*

Status: 6 year

Expiry date: 2009/06/30

Books and Supplies:

Books and supplies cost between \$400 and \$800 per year

Tuition and Student Fees:

Canadian students:

Tuition is free for Canadian citizens or landed immigrants with permanent residence in Quebec taking at least four courses per semester.

A non-refundable \$30 application fee and about \$200 in student fees are charged.

International students:

\$6,000 per semester

Comments:

- MRT program has a large number of applicants and can be selective with students who have a higher degree of competency in Math and Physics
- Clinical sites provide excellent training
- Program is picking up additional satellite training sites
- Some instructors are investigating course delivery by webCT
- Course information and notes are on college website so students can access it at anytime
- There is a strong emphasis on Competency Based Learning with clearly stated objectives, learning activities and clear outcomes
- Program is highly self-directed
- Excellent digital aspects of training
- 4 faculty members are still active practitioners in profession
- One staff member is specialist in MRI
- One staff member was the chief of technology at a health centre
- A wide instructor experience base

Institution: Saskatchewan Institute of Applied Science and Technology, Kelsey Campus	
Contact Information:	
<p><i>Address:</i> 1130 Idylwyld Drive PO Box 1520 Saskatoon, SK S7K 3R5</p>	<p><i>Website:</i> www.siastr.sk.ca <i>Contact Person:</i> Aleatha Schoonover <i>Telephone:</i> (306)933-6202 <i>Fax:</i> (306)933-7018 <i>Email:</i> schoonover@siastr.sk.ca</p>
Size of Program:	
<p><i>Number of faculty:</i></p> <ul style="list-style-type: none"> • Core is integrated with three other programs • 5 instructors at Kelsey campus for didactic and clinical • 3 part-time instructors at Regina campus - clinical 	<p><i>Number of students:</i> Year 1: 16 Year 2: 16</p>
Credential Issued:	
<p>Diploma</p> <p>Combined diploma/Degree: Graduates can transfer credits to University of Regina, British Columbia Institute of Technology or Athabasca University. Integrated program can be completed within 4 years instead of six at the universities</p>	
Program Features:	
<p><i>Length:</i> 2 years starting in August (30 weeks of theory and 58 weeks of clinical experiences)</p> <p><i>Entrance Requirements:</i></p> <ul style="list-style-type: none"> • Grade 12 with English Language Arts A30, English Language Arts B30, Math B30 and two sciences from Physics 20, Chemistry 30 or Biology 30 • Minimum of 70% in Math B30 and each science • CPR Level 'C' • Standard First Aid 	<p><i>Special Admission Requirement:</i></p> <p><i>Graduation Requirements:</i> Successful completion of all didactic and clinical components</p>
Curriculum Model:	
<p><i>Delivery Model:</i></p> <ul style="list-style-type: none"> • Didactic part of program delivered by lecture, demonstration format with audio-visual enhancement <p><i>Unique delivery features:</i></p> <ul style="list-style-type: none"> • Students do not use laptops but instructors use them with multimedia projectors • CD ROMs of review questions and assignments in Anatomy, CT, etc 	<p><i>Experiential Component:</i> Clinical Experience:</p> <ul style="list-style-type: none"> • Practical labs in positioning reference Merrill's Volume 1 and 2 • "Application/quality control" labs in Imaging and Apparatus classes
Curriculum Content:	
<p><i>Course Titles and Credit Hours:</i> Year 1</p> <ul style="list-style-type: none"> • Anatomy and Physiology (5) • Clinical Radiography (2) Introduction • Clinical Radiography 1 (19) • Communication in Health Care (2) • Basic Computer Operation (.5 or 1) • Introduction to Microsoft Word and Excel (.5 or 1) • Patient Care in Radiography 1 (3) • Patient Care in Radiography 2 (3) • Human and Workplace Relations (3) 	<p>Year 1 cont'd</p> <ul style="list-style-type: none"> • Radiographic Pathology 2 (1) • Physics (2) • Radiobiology and Protection 1 (1) • Radiobiology and Protection 2 (1) • Radiographic Technique 1 (3)(Theory) • Radiographic Technique 1 (Practical) (4) • Radiographic Technique 2 (Theory) (4) • Computed Tomography Anatomy (1) • Radiographic Anatomy (2) • Radiation Science and Apparatus 1 (5)

Institution: Saskatchewan Institute of Applied Science and Technology, Kelsey Campus	
<ul style="list-style-type: none"> • Image Recording 1 (3) • Image Recording 2 (3) • Infection Control and Safety (2) • Management Practices (1) • Medical Terminology (.5 or 1) • Radiographic Pathology 1 (1) 	<ul style="list-style-type: none"> • Radiation Science and Apparatus 2 (3) <p>Year 2</p> <ul style="list-style-type: none"> • Clinical Radiography 3 (31) • Clinical Radiography 4 (34) Clinical Radiography 2 (53)
<i>Course Outlines:</i> Available at website	
Student Assessment:	
<p><i>Assessment:</i> All students are assessed based on CAMRT Competency Profile Critical Tasks</p>	<p><i>Clinical</i></p> <ul style="list-style-type: none"> • Competency based evaluations, assignments and one comprehensive exam <p><i>Skills Assessment:</i> Competency based evaluations</p>
<p><i>Content theory:</i> Quizzes, assignments, progress and comprehensive exams. Progress and comprehensive exams are usually multiple choice</p>	
<p><i>Grading Scale:</i></p> <ul style="list-style-type: none"> • Pass/Fail used for practical and clinical • Pass is minimum of 60% • Letter grades are not used • Percentage grades for all other courses as per SIAST protocol 	
Current and Coming Challenges:	
<p><i>Content:</i></p> <ul style="list-style-type: none"> • Reviewed with current curriculum conversion to SIAST new format • Inclusiveness is ongoing • Ongoing as per Program Advisory Council recommendations 	<p><i>Assessment Practices:</i> Ongoing assessment and revisions to improve program</p>
<p><i>Delivery of the Program:</i></p> <ul style="list-style-type: none"> • Increasing intake and accommodating larger numbers of students in the current lab space • Increasing intake and the ability to attain more clinical placements • Additional SIAST funding • Updating current Radiological equipment at the college (funding is difficult to obtain) • Faculty doing didactic also so clinical rotations to facilitate clinical practicum learning • Heavy instructor workload 	<p><i>Instructional Technology:</i> Ongoing to maintain current practices e.g. digital/CR Imaging</p>
Curriculum Renewal:	
<p><i>Process:</i> Conversion to SIAST Curriculum format</p>	<p><i>Frequency:</i> Revision/review annually – conversion started in 2002</p>
Partnerships:	
<p><i>Health Centres:</i></p> <p>Regina Health District</p> <ul style="list-style-type: none"> • Pasqua Hospital • Regina General Hospital, Regina <p>Saskatoon District Health</p> <ul style="list-style-type: none"> • Royal University Hospital, Saskatoon • Saskatoon City Hospital, Saskatoon • St. Paul's Hospital, Saskatoon • X-ray clinics • Breast Screening Clinic 	<p><i>Post-Secondary:</i></p> <ul style="list-style-type: none"> • University of Regina (degree in Medical Imaging) • British Columbia Institute Of Technology • Athabasca University

Institution: Saskatchewan Institute of Applied Science and Technology, Kelsey Campus

Other:

Other:

Accreditation:

Status: 6 year

Expiry date: 2004/12/31

Tuition and Student Fees:

Canadian students:

Year 1 - \$2,510

Year 2 - \$420

International students:

Fees are multiples of Canadian citizens

Comments:

- Students have an opportunity to participate in discussions with SK Health regarding Primary Health Centres
- CLXT students may “ladder” into program as they had credit in some common courses

Appendix B – Industry Occupational Analysis (DACUM) Charts

Medical Radiologic Technologist

January 21st and 28th, 2004
 Facilitated by Mike Stuhldreier and Gene Semchych

DACUM Skill Rating Scale:

Ratings on this scale are based on industrial performance standards.

1 - Can perform some parts of this skill satisfactorily but requires assistance and/or supervision to perform the entire skill.

2 - Can perform this skill satisfactorily but requires periodic assistance and/or supervision.

3 - Can perform this skill competently without assistance and/or supervision.

4a - Can perform this skill competently with more than acceptable speed and quality.

4b - Can perform this skill competently with initiative and adaptability to special problem situations.

4c - Can perform this skill competently and can lead others in performing it.

PROBLEM SOLVE A	Deal with emergency medical situations A1	Troubleshoot equipment failure A2	Think critically A3	Assess situation A4	Prioritize A5	Make decisions A6	Plan A7	Identify hazards A8	
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Think outside the box A9	Adapt to situation A10	Act on solutions or direct others A11	Respond to situations in a timely manner A12					
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c					
PERFORM OFFICE DUTIES B	Schedule procedures B1	Manage patient folders (file, look-up, retrieve, purge) B2	Answer phones B3	Enter data on computer B4	Use word processing software B5	Use HIS, RIS/databases B6	Coordinate patient transport B7	Use office equipment (fax, photocopier, printer) B8	
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Prepare films for reading B9	Package films for transport B10	Finalize billings B11	Print and prepare requisitions/folders B12	Send reports B13				
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c				
COMMUNICATE C	Inform/explain procedures C1	Direct patient prior to and during procedures C2	Read C3	Communicate with colleagues C4	Listen C5	Communicate using telephone C6	Document C7	Use medical terminology C8	
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Ask questions for clarification C9	Coordinate on call staff C10	Clarify C11	Relay results of procedures C12	Follow directions C13	Write C14	Talk C15		
	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c		

OPERATE A VARIETY
OF EQUIPMENT
D

Operate C-arm D1	Operate portable machines D2	Operate digital fluoroscopy and radiography equipment D3	Operate processors D4	Operate CT D5	Operate tomography D6	Operate plate readers D7	Operate x-ray machines D8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Digitize conventional film D9	Operate CR equipment D10	Operate densitometer & sensitometer D11	Use patient transportation & transfer equipment D12	Duplicate films D13	Use patient immobilizers D14	Use grids/filters D15	Use power injectors D16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Use oxygen tanks, and BP monitors and suction D17	Use stereotactic breast biopsy equipment D18	Use mammography equipment D19	Assist with breast ultrasound equipment D20	Operate Fluoroscopy D21	Use venopuncture equipment D22	Set up sterile trays D23	Use angiography equipment D24
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Operate autorads D25							
1 2 3 4a 4b 4c							

**PERFORM A VARIETY OF PROCEDURES
E**

Catheterize patients E1	Participate, perform and assist with GI studies E2	Participate, perform and assist with GU studies E3	Administer ionic & non-ionic iodine-based contrasts E4	Participate, perform and assist with tube placement and re-placements E5	Participate/assist with venograms E6	Participate and assist with myelograms E7	Participate and assist with biopsies E8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Participate and assist with angiograms and heart catheterizations E9	Participate and assist with arthrograms E10	Use power injectors E11	Perform a variety of general duty procedures (e.g. foot, hand, etc.) E12	Participate in O.R. procedures E13	Perform CT's E14	Participate in O.R. procedures E15	Perform mammograms E16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Prepare contrast media E17							
1 2 3 4a 4b 4c							

**PROVIDE PATIENT CARE
F**

Show empathy F1	Read body language F2	Show compassion F3	Answer questions F4	Put patients at ease F5	Maintain CPR certification F6	Focus on safety F7	Respond to patient needs at their level F8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Assist patients with dressing F9	Preserve patient dignity F10	Preserve patient privacy F11	Comfort and console patients F12	Provide physical assistance F13	Transport/transfer patients F14	Monitor patient condition F15	Communicate with caregivers (family, public trustee, etc) F16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Attend to and assist with bodily functions F17	Maintain patients' physical comfort F18	Follow isolation procedures F19	Follow infection control protocols F20	Ensure IVs run properly F21	Advocate for patients' needs F22	Obtain informed consent for procedures F23	Maintain sterile environment F24
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c

TAKE X-RAYS
G

Multi-task G1	Create an image G2	Develop film & process images G3	Critique images for quality and pathology G4	Use radiation protection G5	Interpret requisitions G6	Prepare and inform patients for procedure G7	Position patient G8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Immobilize patient G9	Select appropriate technique G10	Select appropriate film G11	Maintain quality control G12	Plan procedure based on patient condition/needs G13	Perform labour intensive tasks (i.e.. Lifting, positioning patients) G14	Apply judgments in the safe application of radiation G15	Adapt procedures & exams based on pathology/physiology G16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Choose appropriate format and destination for image G17	Document patient dose and contrast G18						
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c						

TRAIN & TEACH
H

Demonstrate H1	Explain H2	Critique H3	Test and evaluate H4	Observe H5	Encourage H6	Re-direct H7	Supervise H8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Act as a role model H9	Assign tasks and responsibilities H10						
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c						

BE PROFESSIONAL
I

Compromise I1	Work with others I2	Be considerate I3	Use diplomacy I4	Show respect I5	Work independently I6	Maintain professional standing I7	Learn continuously I8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Maintain currency (keep up-to-date) I9	Adapt to new technology I10	Participate in professional association I11	Dress appropriately I12	Show enthusiasm I13	Follow Government Guidelines and Regulations I14	Take responsibility for actions I15	Adhere to professional code of ethics I16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c

PERFORM EQUIPMENT MAINTENANCE
J

Change chemicals J1	Clean cross-over racks J2	Perform Quality Control tests J3	Warm up equipment J4	Schedule preventative maintenance J5	Check oxygen and suction J6	Clean equipment J7	Test lead aprons J8
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Disassemble and reassemble processors J9	Calibrate processor temperatures J10	Clean cassettes J11	Document problems J12	Schedule radiation protection surveys J13	Schedule physicist report J14	Keep maintenance logs and documentation J15	Load film magazines J16
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c
Manage stock and supplies J17	Track film usage J18	Perform repeat and reject analysis J19					
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	1 2 3 4a 4b 4c					

Emerging Trends

CT

CR (Computer Radiography)

Photo time depending on age of equipment

Technologists doing barium work (increased knowledge necessary of physiology)

PACs

Picture archiving communication

PET

Aging population

Digital radiography

VCUG

Retiring Trends

Processing and developing equipment

Tomography

Chemicals (Film)

Technique Knowledge (more automation)

IVPs and Other examinations

Arthrography

Appendix C – Graduate Skills and Abilities Chart

Graduate Skills and Abilities Chart
 DACUM, Program Learning Outcomes, College-Wide Learning Outcomes
 Medical Radiologic Technology
 Facilitated by Mike Stuhldreier

Industry DACUM	Faculty expectations	College-wide Learning Outcomes
PROBLEM SOLVE A	PROBLEM SOLVE A	D Think & Solve Problems
Deal with emergency medical situations A1 1 2 3 4a 4b 4c	Deal with emergency medical situations A1 1 2 3 4a 4b 4c	G6 • Cope with uncertainty
Troubleshoot equipment failure A2 1 2 3 4a 4b 4c	Troubleshoot equipment failure A2 1 2 3 4a 4b 4c	B2 • Access, analyze and apply knowledge and skills from various disciplines (e.g. the arts, languages, science, technology, mathematics, social sciences, and the humanities)
Think critically A3 1 2 3 4a 4b 4c	Think critically A3 1 2 3 4a 4b 4c	
Assess situations A4 1 2 3 4a 4b 4c	Assess situations A4 1 2 3 4a 4b 4c	D1 • Assess situations and identify problems
Prioritize A5 1 2 3 4a 4b 4c	Prioritize A5 1 2 3 4a 4b 4c	F2 • Plan and manage time, money and other resources to achieve goals
Make decisions A6 1 2 3 4a 4b 4c	Make decisions A6 1 2 3 4a 4b 4c	D7 • Evaluate solutions to make recommendations or decisions
Plan A7 1 2 3 4a 4b 4c	Plan A7 1 2 3 4a 4b 4c	
Identify hazards A8 1 2 3 4a 4b 4c	Identify hazards A8 1 2 3 4a 4b 4c	D4 • Identify the root cause of a problem
Think outside the box A9 1 2 3 4a 4b 4c	Think outside the box A9 1 2 3 4a 4b 4c	D5 • Be creative and innovative in exploring possible solutions
Adapt to situations A10 1 2 3 4a 4b 4c	Adapt to situations A10 1 2 3 4a 4b 4c	D6 • Readily use science, technology and mathematics as ways to think, gain and share knowledge, solve problems and make decisions K5 • adapt to changing requirements and information
Act on solutions or direct others A11 1 2 3 4a 4b 4c	Act on solutions or direct others A11 1 2 3 4a 4b 4c	D8 • Implement solutions

Respond to situations in a timely manner A12 1 2 3 4a 4b 4c	Respond to situations in a timely manner A12 1 2 3 4a 4b 4c	
PERFORM CLERICAL DUTIES B	PERFORM CLERICAL DUTIES B	B Manage Information
Schedule procedures B1 1 2 3 4a 4b 4c	Schedule procedures B1 1 2 3 4a 4b 4c	
Manage patient folders (file, look-up, retrieve, purge) B2 1 2 3 4a 4b 4c	Manage patient folders (file, look-up, retrieve, purge) B2 1 2 3 4a 4b 4c	
Answer phones B3 1 2 3 4a 4b 4c	Answer phones B3 1 2 3 4a 4b 4c	
Enter data on computer B4 1 2 3 4a 4b 4c	Enter data on computer B4 1 2 3 4a 4b 4c	
Use word processing software B5 1 2 3 4a 4b 4c	Use word processing software B5 1 2 3 4a 4b 4c	
Use HIS, RIS/databases B6 1 2 3 4a 4b 4c	Use HIS, RIS/databases B6 1 2 3 4a 4b 4c	B1 • Locate, gather and organize information using appropriate technology and information systems
Coordinate patient transport B7 1 2 3 4a 4b 4c	Coordinate patient transport B7 1 2 3 4a 4b 4c	
Use office equipment (fax, photocopier, printer) B8 1 2 3 4a 4b 4c	Use office equipment (fax, photocopier, printer) B8 1 2 3 4a 4b 4c	
Prepare films for reading B9 1 2 3 4a 4b 4c	Prepare films for reading B9 1 2 3 4a 4b 4c	
Package films for transport B10 1 2 3 4a 4b 4c	Package films for transport B10 1 2 3 4a 4b 4c	

Finalize billings B11	Follow coding procedures for billing purposes B11	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Print and prepare requisitions/folders B12	Print and prepare requisitions/folders B12	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Send reports B13	Send reports B13	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

COMMUNICATE C	COMMUNICATE C	A Communicate
Inform/explain procedures C1	Inform/explain procedures C1	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Direct patient prior to and during procedures C2	Direct patient prior to and during procedures C2	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Read C3	Read C3	A1 • Read and understand information presented in a variety of forms (e.g. words, graphs, charts, diagrams)
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Communicate with colleagues C4	Communicate with colleagues C4	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Listen C5	Listen C5	A3 • Listen and ask questions to understand and appreciate the points of view of others
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Communicate using telephone C6	Communicate using telephone C6	A4 • Share information using a range of information and communications technologies (e.g. voice, e-mail, computers)
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Document C7	Document C7	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Use medical terminology C8	Use medical terminology C8	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

Ask questions for clarification C9 1 2 3 4a 4b 4c	Ask questions for clarification C9 1 2 3 4a 4b 4c	
Coordinate on call staff C10 1 2 3 4a 4b 4c	Coordinate call backs C10 1 2 3 4a 4b 4c	
Clarify C11 1 2 3 4a 4b 4c	Clarify C11 1 2 3 4a 4b 4c	A5 • Use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas J2 • Ensure that a team's purpose and objectives are clear
Relay results of procedures C12 1 2 3 4a 4b 4c	Relay results of procedures C12 1 2 3 4a 4b 4c	
Follow directions C13 1 2 3 4a 4b 4c	Follow directions C13 1 2 3 4a 4b 4c	
Write C14 1 2 3 4a 4b 4c	Write C14 1 2 3 4a 4b 4c	A2 • Write and speak so others pay attention and understand
Talk C15 1 2 3 4a 4b 4c	Speak C15 1 2 3 4a 4b 4c	

OPERATE A VARIETY OF EQUIPMENT D	OPERATE A VARIETY OF EQUIPMENT D	
Operate C-arm D1 1 2 3 4a 4b 4c	Operate C-arm D1 1 2 3 4a 4b 4c	
Operate portable machines D2 1 2 3 4a 4b 4c	Operate portable machines D2 1 2 3 4a 4b 4c	
Operate digital fluoro and radiography equipment D3 1 2 3 4a 4b 4c	Operate digital fluoro and radiography equipment D3 1 2 3 4a 4b 4c	
Operate processors D4 1 2 3 4a 4b 4c	Operate processors D4 1 2 3 4a 4b 4c	

Operate CT	Operate CT	
D5	D5	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Operate tomography	Operate tomography	
D6	D6	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Operate plate readers	Operate plate readers	
D7	D7	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Operate x-ray machines	Operate x-ray machines	
D8	D8	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Digitize conventional film	Digitize conventional film	
D9	D9	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Operate CR equipment	Operate CR equipment	
D10	D10	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Operate densitometer and sensitometer	Operate densitometer and sensitometer	
D11	D11	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Use patient transportation and transfer equipment	Use patient transportation and transfer equipment	
D12	D12	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Duplicate films	Duplicate films	
D13	D13	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Use patient immobilizers	Use patient immobilizers	
D14	D14	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Use grids/filters	Use grids/filters	
D15	D15	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Use power injectors	Use power injectors	
D16	D16	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

Use oxygen tanks, and BP monitors and suction D17 1 2 3 4a 4b 4c	Use oxygen tanks, and BP monitors and suction D17 1 2 3 4a 4b 4c	
Use stereotactic breast-biopsy equipment D18 1 2 3 4a 4b 4c		
Use mammography equipment D18 1 2 3 4a 4b 4c	Use mammography equipment D18 1 2 3 4a 4b 4c	
Assist with breast-ultrasound equipment D20 1 2 3 4a 4b 4c		
Operate Fluroscopy D19 1 2 3 4a 4b 4c	Operate Fluroscopy D19 1 2 3 4a 4b 4c	
Use venopuncture equipment D20 1 2 3 4a 4b 4c	Use venopuncture equipment D20 1 2 3 4a 4b 4c	
Set up sterile trays D21 1 2 3 4a 4b 4c	Set up sterile trays D21 1 2 3 4a 4b 4c	
Use angiography equipment D22 1 2 3 4a 4b 4c	Use angiography equipment D22 1 2 3 4a 4b 4c	
Operate autorads D23 1 2 3 4a 4b 4c	Operate digital work station D23 1 2 3 4a 4b 4c	

PERFORM A VARIETY OF PROCEDURES E	PERFORM A VARIETY OF PROCEDURES E	G Be Adaptable K1 • Plan, design or carry out a project or task from start to finish with well-defined objectives and outcomes K4 • Select and use appropriate tools and technology for a task or project
Catheterize patients E1 1 2 3 4a 4b 4c	Catheterize patients E1 1 2 3 4a 4b 4c	
Participate, perform and assist with GI studies E2 1 2 3 4a 4b 4c	Participate, perform and assist with GI studies E2 1 2 3 4a 4b 4c	

Participate, perform and assist with GU studies E3 1 2 3 4a 4b 4c	Participate, perform and assist with GU studies E3 1 2 3 4a 4b 4c	
Administer ionic and non-ionic iodine-based contrasts E4 1 2 3 4a 4b 4c	Administer ionic and non-ionic iodine-based contrasts E4 1 2 3 4a 4b 4c	
Participate, perform, & assist with tube placement and replacements E5 1 2 3 4a 4b 4c	Participate/assist with tube placement and replacements E5 1 2 3 4a 4b 4c	
Participate/assist with venograms E6 1 2 3 4a 4b 4c	Participate/assist with venograms E6 1 2 3 4a 4b 4c	
Participate/assist with myelograms E7 1 2 3 4a 4b 4c	Participate/assist with myelograms E7 1 2 3 4a 4b 4c	
Participate/assist with biopsies E8 1 2 3 4a 4b 4c	Participate/assist with biopsies E8 1 2 3 4a 4b 4c	
Participate/assist with angiograms and heart cath E9 1 2 3 4a 4b 4c	Participate/assist with angiograms and heart cath E9 1 2 3 4a 4b 4c	
Participate/assist with arthrograms E10 1 2 3 4a 4b 4c	Participate/assist with arthrograms E10 1 2 3 4a 4b 4c	
Perform a variety of general duty procedures (e.g. foot, hand, etc.) E11 1 2 3 4a 4b 4c	Perform a variety of general duty procedures (e.g. foot, hand, etc.) E11 1 2 3 4a 4b 4c	
Participate in O.R. procedures E12 1 2 3 4a 4b 4c	Participate in O.R. procedures E12 1 2 3 4a 4b 4c	
Perform CT's E13 1 2 3 4a 4b 4c	Perform CT's E13 1 2 3 4a 4b 4c	
Perform mammograms E14 1 2 3 4a 4b 4c	Perform mammograms E14 1 2 3 4a 4b 4c	

Prepare contrast media E15	Prepare contrast media E15	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Perform enema tube placements E16	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

PROVIDE PATIENT CARE F	PROVIDE PATIENT CARE F	J9 • Manage and resolve conflict when appropriate
Show empathy F1	Show empathy F1	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Read body language F2	Read body language F2	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Show compassion F3	Show compassion F3	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Answer questions F4	Answer questions F4	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Put patients at ease F5	Put patients at ease F5	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Maintain CPR certification F6	Maintain CPR certification F6	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Focus on safety F7	Focus on safety F7	F3 • Assess, weigh and manage risk
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Respond to patient needs at their level F8	Respond to patient needs at their level F8	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Assist patients with dressing F9	Assist patients with dressing F9	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

Preserve patient dignity F10 1 2 3 4a 4b 4c	Preserve patient dignity F10 1 2 3 4a 4b 4c	
Preserve patient privacy F11 1 2 3 4a 4b 4c	Preserve patient privacy F11 1 2 3 4a 4b 4c	
Comfort and console patients F12 1 2 3 4a 4b 4c	Comfort and console patients F12 1 2 3 4a 4b 4c	
Provide physical assistance F13 1 2 3 4a 4b 4c	Provide physical assistance F13 1 2 3 4a 4b 4c	
Transport/transfer patients F14 1 2 3 4a 4b 4c	Transport/transfer patients F14 1 2 3 4a 4b 4c	
Monitor patient condition F15 1 2 3 4a 4b 4c	Monitor patient condition F15 1 2 3 4a 4b 4c	
Communicate with caregivers (family, public trustee, etc.) F16 1 2 3 4a 4b 4c	Communicate with caregivers (family, public trustee, etc.) F16 1 2 3 4a 4b 4c	
Attend to and assist with bodily functions F17 1 2 3 4a 4b 4c	Attend to and assist with bodily functions F17 1 2 3 4a 4b 4c	
Maintain patients' physical comfort F18 1 2 3 4a 4b 4c	Maintain patients' physical comfort F18 1 2 3 4a 4b 4c	
Follow isolation procedures F19 1 2 3 4a 4b 4c	Follow isolation procedures F19 1 2 3 4a 4b 4c	
Follow infection control protocols F20 1 2 3 4a 4b 4c	Follow infection control protocols F20 1 2 3 4a 4b 4c	
Ensure IVs run properly F21 1 2 3 4a 4b 4c	Ensure IVs run properly F21 1 2 3 4a 4b 4c	

Advocate for patients' needs F22 1 2 3 4a 4b 4c	Advocate for patients' needs F22 1 2 3 4a 4b 4c	
Obtain informed consent for procedures F23 1 2 3 4a 4b 4c	Follow consent guidelines and procedures F23 1 2 3 4a 4b 4c	
Maintain sterile environment F24 1 2 3 4a 4b 4c	Maintain sterile environment F24 1 2 3 4a 4b 4c	
TAKE X-RAYS G 1 2 3 4a 4b 4c	TAKE X-RAYS G 1 2 3 4a 4b 4c	K1 • Plan, design or carry out a project or task from start to finish with well-defined objectives and outcomes K4 • Select and use appropriate tools and technology for a task or project
Multi-task G1 1 2 3 4a 4b 4c	Multi-task G1 1 2 3 4a 4b 4c	G2 • Carry out multiple tasks or projects
Create an image G2 1 2 3 4a 4b 4c	Create an image G2 1 2 3 4a 4b 4c	
Develop film and process images G3 1 2 3 4a 4b 4c	Process images G3 1 2 3 4a 4b 4c	
Critique images for quality and pathology G4 1 2 3 4a 4b 4c	Critique images for quality and pathology G4 1 2 3 4a 4b 4c	D3 • Recognize the human, interpersonal, technical, scientific and mathematical dimensions of a problem
Use radiation protection G5 1 2 3 4a 4b 4c	Use radiation protection G5 1 2 3 4a 4b 4c	
Interpret requisitions G6 1 2 3 4a 4b 4c	Interpret requisitions G6 1 2 3 4a 4b 4c	
Prepare and inform patients for procedure G7 1 2 3 4a 4b 4c	Prepare and inform patients for procedure G7 1 2 3 4a 4b 4c	
Position patient G8 1 2 3 4a 4b 4c	Position patient G8 1 2 3 4a 4b 4c	

Immobilize patient G9 1 2 3 4a 4b 4c Select appropriate technique G10 1 2 3 4a 4b 4c Select appropriate film G11 1 2 3 4a 4b 4c Maintain Quality Control G12 Moved to K 1 2 3 4a 4b 4c Plan procedure based on patient condition/needs G13 1 2 3 4a 4b 4c Perform labour intensive tasks (i.e. lifting, positioning patients) G14 1 2 3 4a 4b 4c Apply judgments in the safe application of radiation G15 1 2 3 4a 4b 4c Adapt procedures and exams based on pathology/physiology G16 1 2 3 4a 4b 4c Choose appropriate format and destination for image G17 1 2 3 4a 4b 4c Document patient dose and contrast G18 1 2 3 4a 4b 4c	Immobilize patient G9 1 2 3 4a 4b 4c Select appropriate technique G10 1 2 3 4a 4b 4c Select appropriate image receptor G11 1 2 3 4a 4b 4c Track film usage G12 1 2 3 4a 4b 4c Plan procedure based on patient condition/needs G13 1 2 3 4a 4b 4c Perform labour intensive tasks (i.e. lifting, positioning patients) G14 1 2 3 4a 4b 4c Apply judgments in the safe application of radiation G15 1 2 3 4a 4b 4c Adapt procedures and exams based on pathology/physiology G16 1 2 3 4a 4b 4c Choose appropriate format and destination for image G17 1 2 3 4a 4b 4c Document patient dose and contrast G18 1 2 3 4a 4b 4c	
		G3 • Be innovative and resourceful: identify and suggest alternative ways to achieve goals and get the job done
		E4 • Take care of your personal health

TRAIN AND TEACH H	TRAIN AND TEACH H	F Be Responsible
Demonstrate H1 1 2 3 4a 4b 4c	Demonstrate H1 1 2 3 4a 4b 4c	J6 • Contribute to a team by sharing information and expertise

Explain H2 1 2 3 4a 4b 4c	Explain H2 1 2 3 4a 4b 4c	
Critique H3 1 2 3 4a 4b 4c	Critique H3 1 2 3 4a 4b 4c	J5 • Accept and provide feedback in a constructive and considerate manner
Test and evaluate H4 1 2 3 4a 4b 4c	Test and evaluate H4 1 2 3 4a 4b 4c	
Observe H5 1 2 3 4a 4b 4c	Observe H5 1 2 3 4a 4b 4c	
Encourage H6 1 2 3 4a 4b 4c	Encourage H6 1 2 3 4a 4b 4c	J7 • Lead or support when appropriate, motivating a group for high performance
Re-direct H7 1 2 3 4a 4b 4c	Re-direct H7 1 2 3 4a 4b 4c	
Supervise H8 1 2 3 4a 4b 4c	Supervise H8 1 2 3 4a 4b 4c	
Act as a role model H9 1 2 3 4a 4b 4c	Act as a role model H9 1 2 3 4a 4b 4c	E5 • Show interest, initiative and effort
Assign tasks and responsibilities H10 1 2 3 4a 4b 4c	Assign tasks and responsibilities H10 1 2 3 4a 4b 4c	

BE PROFESSIONAL I	BE PROFESSIONAL I	E Demonstrate Positive Attitudes & Behaviours I Work Safely
Compromise I1 1 2 3 4a 4b 4c	Compromise I1 1 2 3 4a 4b 4c	J3 • Be flexible: respect, be open to and supportive of the thoughts, opinions and contributions of others in a group
Work with others I2 1 2 3 4a 4b 4c	Work with others I2 1 2 3 4a 4b 4c	E3 • Recognize your own and other people's good efforts G1 • Work as part of a team J Work with Others J1 • Understand and work within the dynamics of a group J8 • Understand the role of conflict in a group to reach solutions

Be considerate I3 1 2 3 4a 4b 4c	Be considerate I3 1 2 3 4a 4b 4c	
Use diplomacy I4 1 2 3 4a 4b 4c	Use diplomacy I4 1 2 3 4a 4b 4c	
Show respect I5 1 2 3 4a 4b 4c	Show respect I5 1 2 3 4a 4b 4c	J4 • Recognize and respect people's diversity, individual differences and perspectives
Work independently I6 1 2 3 4a 4b 4c	Work independently I6 1 2 3 4a 4b 4c	G1 • Work independently
Maintain professional standing I7 1 2 3 4a 4b 4c	Maintain professional standing I7 1 2 3 4a 4b 4c	
Learn continuously I8 1 2 3 4a 4b 4c	Learn continuously I8 1 2 3 4a 4b 4c	H Learn Continuously H2 • Assess personal strengths and areas for development H3 • Set your own learning goals H5 • Plan for and achieve your learning goals
Maintain currency (keep up-to-date) I9 1 2 3 4a 4b 4c	Maintain currency (keep up-to-date) I9 1 2 3 4a 4b 4c	H1 • Be willing to continuously learn and grow H4 • Identify and access learning sources and opportunities
Adapt to new technologies I10 1 2 3 4a 4b 4c	Adapt to new technologies I10 1 2 3 4a 4b 4c	G4 • Be open and respond constructively to change
Participate in professional association I11 1 2 3 4a 4b 4c	Maintain membership in a professional association I11 1 2 3 4a 4b 4c	F5 • Be socially responsible and contribute to your community
Dress appropriately I12 1 2 3 4a 4b 4c	Dress appropriately I12 1 2 3 4a 4b 4c	
Show enthusiasm I13 1 2 3 4a 4b 4c	Show enthusiasm I13 1 2 3 4a 4b 4c	E1 • Feel good about yourself and be confident
Follow Government Guidelines and Regulations I14 1 2 3 4a 4b 4c	Follow Government Guidelines and Regulations I14 1 2 3 4a 4b 4c	I1 • Be aware of personal and group health and safety practices and procedures, and act in accordance with these

Take responsibility for actions I15 1 2 3 4a 4b 4c	Take responsibility for actions I15 1 2 3 4a 4b 4c	F4 • Be accountable for your actions and the actions of your group
Adhere to professional code of ethics I16 1 2 3 4a 4b 4c	Adhere to professional code of ethics I16 1 2 3 4a 4b 4c	E2 • Deal with people, problems and situations with honesty, integrity and personal ethics
	Accept criticism I17 1 2 3 4a 4b 4c	G5 • Learn from your mistakes and accept feedback
	Participate in research initiatives I18 1 2 3 4a 4b 4c	K Participate in Projects & Tasks
	Adhere to professional standards of practice I19 1 2 3 4a 4b 4c	
	Be informed of and follow workplace policies & procedures I20 1 2 3 4a 4b 4c	I1 • Be aware of personal and group health and safety practices and procedures, and act in accordance with these
	Maintain a healthy life-work balance I21 1 2 3 4a 4b 4c	F1 • Set goals and priorities balancing work and personal life

PERFORM EQUIPMENT MAINTENANCE J	PERFORM EQUIPMENT MAINTENANCE J	K3 • Work to agreed quality standards and specifications
Change chemicals J1 1 2 3 4a 4b 4c	Change chemicals J1 1 2 3 4a 4b 4c	
Clean cross-over racks J2 1 2 3 4a 4b 4c	Clean cross-over racks J2 1 2 3 4a 4b 4c	
Perform Quality Control Tests J3 Moved to K1 1 2 3 4a 4b 4c		
Warm up equipment J4 1 2 3 4a 4b 4c	Warm up equipment J3 1 2 3 4a 4b 4c	

Schedule preventative maintenance J5 Moved to K2		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Check oxygen and suction J5	Check oxygen and suction J4	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Clean equipment J7	Clean x-ray room equipment J5	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Test lead aprons J8 Moved to K3		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Disassemble and reassemble processors J9	Disassemble and reassemble processors J6	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Calibrate processor temperatures J10 Moved to K4		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Clean cassettes J11 Moved to K5		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Document problems J12 Moved to K6		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Schedule radiation protection surveys Moved to K7 J13		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Schedule physicist report J14		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Keep maintenance logs and documentation J15 Moved to K8		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Load film magazines J16	Load film magazines J7	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

Manage stock and supplies J17	Manage stock and supplies J8	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Track film usage Moved to G12 J18		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
Perform repeat and reject analysis J19 Moved to K9		
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

	MANAGE QUALITY K	C Use Numbers K6 • Continuously monitor the success of a project or task and identify ways to improve
	Perform QC tests on radiographic equipment K1	C2 • Observe and record data using appropriate methods, tools and technology K2 • Develop a plan, seek feedback, test, revise and implement
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Schedule preventative maintenance K2	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Test lead aprons K3	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Calibrate processor temperatures K4	C1 • Decide what needs to be measured or calculated
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Clean image receptors K5	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Document problems K6	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Participate in radiation protection surveys K7	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Maintain logs and documentation K8	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	


	Perform repeat and reject analysis K9	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Learn from mistakes K10	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Participate in film audit K11	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Focus on quality patient care K12	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Complete occurrence report K13	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Clean processor K14	
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Interpret QC test results K15	C3 • Make estimates and verify calculations
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Implement corrective actions K16	D9 • Check to see if a solution works, and act on opportunities for improvement
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	
	Analyze & reflect on patient satisfaction surveys K17	D2 • Seek different points of view and evaluate them based on facts
1 2 3 4a 4b 4c	1 2 3 4a 4b 4c	

Grey shaded Box = General Areas of Competency (GAC)
Unshaded Box = Specific skill within GAC
Capitalized text in CWLO = general Area of Competency (GAC)
Normal text in CWLO - Specific skills within GAC

DACUM Skill Rating Scale:

Ratings on this scale are based on industrial performance standards

- 1 Can perform some parts of this skill satisfactorily but requires assistance and/or supervision to perform the entire skill.
- 2 Can perform this skill satisfactorily but requires periodic assistance and/or supervision
- 3 Can perform this skill competently without assistance and/or supervision.
- 4a Can perform this skill competently with more than acceptable speed and quality.
- 4b Can perform this skill competently with initiative and adaptability to special problem situations.
- 4c Can perform this skill competently and can lead others in performing it.

 Indicates skill rating.

 DACUM Committee Skill deleted.

 Skill or Competency added by Faculty or DACUM wording changed.

Appendix D – Graduate Profile

Medical Radiologic Technology Graduate Profile

The Medical Radiologic Technology graduate:

- A. Works as a professional maintaining high standards of practice, making ethical/legal judgments and decisions, and sustaining professional standing through a commitment to life-long learning.
- B. Works within the dynamics of the medical community and participates in related research activities, displaying independence and the ability to work as a member of the health care team.
- C. Recognizes and respects people's diversity, individual differences and perspectives.
- D. Provides quality patient care that focuses on safety and patients' physical and emotional needs, as well as ensuring personal safety and the safety of others.
- E. Organizes and performs medical imaging procedures from patient preparation through critiquing images to post-procedural care by employing applicable technical knowledge.
- F. Performs and/or participates in a variety of diagnostic imaging, interventional, and medical procedures in the medical imaging department, patient care units, and critical care areas.
- G. Operates a variety of imaging, accessory, and medical equipment and troubleshoots equipment failures.
- H. Demonstrates effective use of written, verbal, and non-verbal communication, employing relevant knowledge, skills, and judgment in a clinical setting.
- I. Thinks and solves problems in a broad range of situations by thinking critically and adapting to new circumstances.
- J. Educates and mentors others and acts as a role model in the effective use of medical imaging technology and related procedures.
- K. Maintains quality assurance through critically evaluating procedures and results.
- L. Monitors and/or maintains radiographic, processing, and medical equipment and department supplies.
- M. Performs a variety of Quality Control procedures including QC management, equipment testing, analyzing data, interpreting results, and implementing corrective actions.
- N. Demonstrates organization skills, manages patient information, and performs a variety of clerical duties using appropriate technology.

***Appendix E - Graduate Profile and Canadian Association of Medical
Radiation Technologists (CAMRT) Competencies
Comparison***

CAMRT Radiological Technology Critical Task List	
RRC Graduate Profile Statements A and I are threads that run through all competencies	
CAMRT Competency	RRC Graduate Profile Statements
MODULE A IMAGING PROCEDURES	
A1 Utilize the request for consultation	C, D, E, H, G, J
A2 Prepare work environment for imaging procedures	B, C, H, E, N
A3 Perform pre-procedural tasks	D, E, F, G
A4 Perform patient positioning and related tasks	C, D, E, F, G, H
A5 Operate imaging equipment	D, E, F, G, H
A6 Perform image processing tasks	G, H
A7 Critique images and implement corrective measures	B, E, K, H
A8 Complete post-procedural tasks	B, C, D, E, H, J
MODULE B RADIATION HEALTH AND SAFETY	
B1 Protect the patient	B, C, D, E, G, H, J
B2 Protect the technologist	D, G, J
B3 Protect individuals required to be present during the procedure	D, G, H, J
B4 Protect individuals not required to be present during the procedure	B, D, H, J
B5 Monitor personal radiation exposure	D
MODULE C PATIENT CARE	
C1 Ensure patient safety	B, D, G
C2 Establish patient trust and confidence	C, D, E, H
C3 Attend to the patient's comfort and needs	B, C, D, H, K
C4 Perform patient care procedures	D, F, G, H, K, L, M
C5 Assist in the administration of contrast media and other pharmaceuticals	B, C, D, E, F, G, H, J, K, L
C6 Ensure the confidentiality of patient information	D, N
MODULE D MAINTENANCE OF RADIOGRAPHIC AND PROCESSING EQUIPMENT	
D1 Monitor and maintain processing equipment and facilities	D, G, H, K, L, M
D2 Monitor radiographic equipment	G, H, K, L, M
D3 Perform quality control tasks	G, H, K, L, M
MODULE E PROFESSIONAL PRACTICE	
E1 Function within legal and ethical guidelines	C, D
E2 Demonstrate professional behaviour	B, C, D, H, J
E3 Demonstrate professional responsibility	B, J

Appendix E – Program Renewal Plan

Medical Radiologic Technology Program Renewal Plan

In the next five years, the Medical Radiological Technology program will continue its commitment of surpassing established standards of excellence by providing a nationally recognized, challenging, relevant and current curriculum that prepares graduates for a high degree of commitment to patient care, the ability to respond to the changing demands in technology and meet the requirements of the profession and demands of employers.

The Medical Radiological Technology program has developed the following goals to realize its vision:

1. Students

Provide an exceptional educational environment that will enable learners to develop strong patient care, academic and technological, skills which will prepare them to become effective problem solvers, capable communicators and life long learners. The program will:

- Review admission criteria to ensure students entering the program are fully aware and prepared to meet the demands of the program.
Implementation: Ongoing
- Lobby for financial donations for the establishment of a scholarship fund for students.
Implementation: Ongoing
- Diversify student population by directing recruitment and marketing efforts to a wider audience.
Implementation: Ongoing
- Adapt the program to meet the meet the physical, affective, and cognitive needs of the learner.
Implementation: Ongoing
- Explore flexible programming options as to course load and time frame to accommodate part-time studies.
Implementation: September 2005 – June 2006

2. Curriculum

The curriculum will be challenging, based upon a core of knowledge, and promote higher level thinking. The program will:

- Provide ongoing curriculum review by curriculum committee and other stakeholders.
Implementation: Ongoing

- Revise curriculum to be completely outcomes based.
Implementation: July 2004 – June 2005
- Develop all course outlines in the SAC approved standardized format
Implementation: January 2005 – June 2005
- Convert program to semester format for 2005 – 2006 academic year
Implementation: September 2005
- Explore integration of online instructional approaches to course delivery which will increase student achievement by enhancing the quality of curricula and instruction.
Implementation: September 2005 – June 2006

3. Instructors

Ensure that clinical and didactic instructors are current and competent in imaging technology, personalized patient care and exemplary educational practices. The program will:

- Advocate and support the achievement of a certificate in adult education for all clinical and didactic instructors.
Implementation: Ongoing
- Provide ongoing professional development opportunities to ensure that clinical and didactic instructors remain current with technical advances within the field and accreditation requirements.
Implementation: Ongoing
- Provide clinical and didactic instructors opportunities to meet regularly to create a cohesive network of professional and qualified team members.
Implementation: Ongoing
- Improve communication between clinical and didactic instructors to enhance the quality of instruction and supervision of students.
Implementation: Ongoing
- Include students in research projects.
Implementation: September 2007 – June 2009

4. Clinical

Provide supportive and outstanding clinical learning environments for students that adhere to the philosophy of excellence in education. The program will:

- Endorse continued professional development of clinical staff in the areas of communication and teaching.
Implementation: Ongoing
- Continue to actively forge new partnerships with urban and rural health care providers.
Implementation: Ongoing

- Increase the number of graduates to reduce the staff shortages created by the retirement of baby boomers.

Implementation: September 2005 – June 2007

5. Equipment and Resources

Ensure that sufficient facilities, staffing and resources are available for the program to achieve its vision: The program will:

- Develop effective strategies for donations of equipment that will encompass partnerships with the communities of interest.
Implementation: Ongoing
- Seek increased budget to hire educational assistants and/or instructors to accommodate increases in numbers of students as the need arises.
Implementation: January 2005 – June 2009
- Seek to acquire funding for program related equipment to ensure effective delivery of curriculum.
Implementation: July 2004 – June 2007
- Augment lab space to accommodate increased number of students in the program.
Implementation: September 2004 – June 2007
- Seek additional funding to hire qualified short term and substitute instructors.
Implementation: September 2004 – June 2006

Appendix F – 5 –Year Program Renewal Plan in Gantt Format

Medical Radiologic Techology Program

2004-2009 Program Renewal Plan

		2004	2005		2006		2007		2008		2009	
		July - Dec	Jan - June	July - Dec	Jan - June	July - Dec	Jan - June	July - Dec	Jan - June	July - Dec	Jan - June	
1. Students		◆										
Review admission criteria	Ongoing	◆										
Establish a scholarship fund	Ongoing	◆										
Diversify student population	Ongoing	◆										
Adapt the program to meet a variety of learner needs	Ongoing	◆										
Explore flexible program options (i.e. for part-time study)	2005/06 Academic Year		◆									
2. Curriculum		◆										
Provide ongoing curriculum review by curriculum committee and other stakeholders.	Ongoing	◆										
Revise curriculum to be completely outcomes based.	July 04 to December 04	◆										
Develop all course outlines in the SAC approved standardized format	January 05 to June 05		◆									
Offer program in semester format	Sept. 05			◆								
Explore integration of online course delivery	2005/06 Academic Year		◆									
3. Instructors		◆										
Advocate/support CAE completion for all clinical and didactic instructors.	Ongoing	◆										
Provide ongoing PD for didactic and clinical instructors	Ongoing	◆										
Provide clinical & didactic instructors opportunities to meet regularly	Ongoing	◆										
Improve communication between clinical & didactic instructors	Ongoing	◆										
Include students in research projects.	2007/08 & 2008/09 Academic Years							◆	◆			
4. Clinical		◆										
Endorse continued education PD of clinical staff	Ongoing	◆										
Continue to actively forge new partnerships with urban and rural health care providers.	Ongoing	◆										
Increase the number of graduates	2005/06 & 2006/07 Academic Years		◆									
5. Equipment and Resources		◆										
Develop effective strategies for donations of equipment	Ongoing	◆										
Seek budget increase to hire EAs and/or instructors	Ongoing	◆										
Seek to acquire funding for program related equipment	2004/05 to 2006/07 Academic Years	◆	◆	◆								
Augment lab space	2004/05 to 2006/07 Academic Years	◆	◆	◆								
Seek additional funding to hire qualified short term and substitute instructors.	2004/05 to 2005/06 Academic Years	◆	◆	◆								