



RED RIVER COLLEGE
OF APPLIED ARTS, SCIENCE AND TECHNOLOGY

**Industrial Arts/Technology Teacher
Education**
Curriculum Validation – Program Renewal

Final Report

August 2008

Submitted to:

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Chair
Teacher Education

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Industrial Arts – Technology Teacher Education

Curriculum Validation Final Report

Introduction

The Curriculum Validation – Program Renewal process for the Industrial Arts/Technology Teacher Education program began in January 2008, following the Curriculum Validation — Program Renewal model designed by the program and Curriculum Development (P&CD) department and approved by the Red River College (RRC) Senior Academic Committee. The intent of the Curriculum Validation process is to analyze the status of the program and to chart a course for program renewal. The Process uses a structured format identifying the current college expectations, a description and vision for a desired future state, and a 5-year plan for creating the desired future state

Curriculum Validation Deliverables:

The Industrial Arts/Technology Teacher Education Program Validation process involved 8 interrelated deliverables:

1. Environmental Scan and Analysis of the key findings of similar programs across Canada and the United States of America.
2. Industry Occupational Analysis (DACUM)
3. Emerging/Sustaining/Retiring Content Trends Workshops and List
4. Graduate Skills and Abilities Chart
5. Graduate Profile
6. Program Renewal Vision and Goals
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 nationally and internationally. The scan focused on degree/certificate granting programs at universities/colleges that were comparable to the Industrial Arts/Technology Teacher Education program offered at Red River College/University of Winnipeg. Research indicates that only a few of the programs have adopted a similar model to the unique program delivered at Red River College/University of Winnipeg. Therefore, because of the varying combinations of responsibility between colleges and universities for different portions

of a degree granting program, entire programs were scanned to enable a complete comparison to the portion of the program delivered by Red River College. The research involved locating universities/colleges with comparable programs through the internet with a follow-up contact by email and/or telephone to confirm the findings and add additional information that was not available on the website. The information was gathered by the Curriculum Validation Facilitator through web sites, library research, email and telephone contact. For the Curriculum Validation – Program Renewal process, seventeen programs were scanned. They included:

Technology Studies Education Diploma in the Curriculum Studies Dept.	BCIT/University of British Columbia	Vancouver BC
B. Ed. in Vocational/Industrial Arts in the Technology Teacher Education/Industrial Arts Teacher Education Dept.	University of Saskatchewan	Saskatoon SK
Bachelor of Education (Careers & Technology Studies major) in the Faculty of Education	University of Alberta	Edmonton AB
Trades Technology Teacher Education	Okanagan College/UBC Okanagan	Kelowna BC
B. Ed. (Intermediate/Secondary)	Memorial University of Newfoundland	St. John's NL
Technology Education Teacher Intern Program	Acadia University School of Education	Wolfville NS
Advanced undergraduate diploma in Technology Education	University of New Brunswick	Fredericton NB
Occupational and Technical Studies	Old Dominion University	Norfolk VA
B.S. (Technology Education major)	Bemidji State University	Bemidji MN
Bachelor of Education in Technology Education	Queen's University	
Bachelor of Education in Technology Education	Brock University	
Diploma in Technical Education	University of Toronto	
Diploma (Technological Studies)	Western University of Ontario	
Bachelor of Education / Diploma in Education	University of Windsor	
Bachelor of Education	York University	
Integrative STEM Education Program	Virginia Polytechnic Institute and State University	Blacksburg VA
Bachelor of Education (Trades and Technology Education)	Thompson Rivers University	Kamloops BC

Of the scans, only the results first nine are included in the detail results later in this report.

The six Ontario results are not included because none of the programs in Ontario allow students to graduate with qualifications to teach all of the Industrial Arts areas. It was determined in research that the Technological Education option at Universities

in Ontario is designed to provide emphasis on broad-based technologies as determined by the Ministry of Education and qualification is granted in only one of these broad-based technologies (Grades 9- 12):

- Communications Technology
- Construction Technology
- Hospitality Services
- Manufacturing Technology
- Personal Services
- Technological Design
- Transportation Technology

Virginia Tech is not included in the detailed chart because it has discontinued its Undergraduate program that would have been comparable to RRC; however it is mentioned later in this summary because of its new and “cutting” edge STEM (Science, Technology, Engineering, Math) program.

The results from the Thompson Rivers program are not included because that program is still in the implementation stage.

Key findings from the Environmental Scan

The following are highlights from the Environmental Scan.

Size of Program:

The number of students in the undergraduate program averages at about 13 students per year in most of the programs scanned with a low of 7 at the University of Alberta and a high of 22 per year in the British Columbia Institute of Technology/University of British Columbia program. Red River College has about 15 students in each year of the Industrial Arts/Technology Teacher Education program.

Credential Issued:

All of the programs scanned offer all or some combination of:

- An Undergraduate Degree program (a B.Ed. with some type of Technology Education major).
- An After Degree program (a B.Ed. with a Technology Education major taken in conjunction with or consecutive to another baccalaureate degree).
- A Post Baccalaureate program (usually in the form of a one year diploma in Technology Education).

Red River College offers all three.

Program Features:

- Many programs are offered by one institution – a university, with the technical courses either taught in labs on campus or in an off campus facility such as a local technical high school.
- Two other programs (BCIT/UBC and Okanagan College/UBC-O) have a partnership arrangement like that of RRC/U of W in which two institutions take responsibility for offering differing portions of the program. In each case one institution provides most of the “technical courses” while the other provides most of the “professional courses”.
- Several of the programs that are offered at a single institution, without a partnership, have indicated a difficulty with providing the required broad-based technical background for the program. Some of these programs have indicated that they are looking at the RRC/U of W program as a model to emulate.
- The length of time required in an undergraduate program from high school graduation to qualification as a Technology Education Teacher varies from 4 to 6 years with 5 years in the RRC/U of W program.
- A few of the programs provide for some form of PLAR credit, while most provide for only some form of transfer credit from other institutions.

Curriculum Model & Content:

- The experiential component varies from a low of about 12 weeks to the RRC program high of about 24 weeks throughout the entire program.
- Some programs, like the University of Saskatchewan, offer a full time internship teaching experience during one semester.
- A few programs like Okanagan College/UBC-O, require that the student teaching load build up in a transitioning process to about a 80% teaching load, than the whole process is reversed as the load is slowly transferred back to the supervising teacher until the load is at about 10% at the end of the experience.
- Most undergraduate programs offer a major in “technology education” with a minor in another “teachable”. The University of New Brunswick offers only a minor in Technology Education.
- About half of the programs offer a publically accessible link to course outlines online.

Student assessment:

- The entire spectrum of content and skills assessment tools are used by most institutions in most, if not all of the programs scanned.
- The experiential component in all of the programs is a pass/fail based on a rubric check list.
- The experiential component at Old Dominion University requires that students assemble a portfolio of an extensive list of items (such as a video of their teaching) during their student teaching experience.

Current and coming challenges:

- Almost all of the programs listed recruitment as a major challenge. Many indicated that in relation to this, economic factors and competing with industry contributed to this challenge. In some cases, students acquire technical skills in the program and then are “head hunted” by more lucrative non-teaching jobs in industry.
- Some programs are challenged in maintaining the integrity of the program in the University setting.
- Some report resisting forces in the Department of Education that are attempting to force technology education to regress to a more traditional Industrial Arts skills training .
- Many indicate a challenge to maintain adequate funding to keep technology current.

Curriculum Renewal:

Very few programs have a formal curriculum renewal process in place. Most review programs on a “as needed” basis.

Partnerships:

Most partnerships are with schools and school divisions, primarily for facilitating the experiential component.

Other:

There is an increasing trend in the United States toward a STEM (integrated (Science, Technology, Engineering, Math) approach. These new degree options “develop K-16 STEM educators, leaders, scholars, and researchers prepared to investigate, teach, and disseminate new integrative approaches to STEM teaching and learning. Their focus is on the investigation and application of new integrative

approaches to STEM education that is wholly consistent with the recommendations of the seminal STEM education reform publications of the past two decades.”

2. Industry Occupational Analysis (DACUM) Chart

The Industry Occupational Analysis using the DACUM process is a familiar component of the curriculum development process at Red River College and provides the program with a description of skills required for an entry-level position in Industrial teaching in Manitoba. Included in the process is the identification of emerging and retiring industry trends.

The DACUM occupational analysis took place over two full days (April 23 and 25, 2008). The eleven Industrial Arts teacher participants represented a cross-section of the five content areas: Power and Energy, Graphics/Drafting, Woodworking, Metalworking and Technology Education.

The participants were asked to identify the major competencies and related tasks required by entry-level Industrial Arts teachers. The end product was the development of the DACUM chart (*see Appendix B*).

Also, as a part of the occupational analysis, the following emerging and retiring trends were identified:

Emerging Trends

- higher safety requirements recreational focus
- robotics
- teaching - hanging on to (teachers)
- traditional approaches
- simulations
- teachers
- consultants (way we teach)
- computer graphics designing
- less hands-on drawing
- computer technology - communication control processes i.e. CNC
- composites
- higher EAL students / programming
- pervasive development disorder - students
- relationship vocational ed - industrial arts articulation
- green aspect
- computerized machinery
- competition with entertainment i.e. video games, iPod
- electronics / computers everywhere/ internet - classroom tool
- computer apps - CNC / digital photography
- multitasking
- skilled labour
- shift in communication strategies
- bandwidth

- solid modeling
- personal / meaningful learning
- 3D computer
- better use of skills of immigrants
- use of lasers
- more electronic sensors
- more hospital careers (with greater usage of technology)
- adaptability
- lower routine tasks
- location shifting - time / location where classes are held
- critical thinking, less lectures

Retiring Trends

- less hand drafting
- printing processes changes
- offset press
- photography - film processing
- ability to read / interpret technical instructions
- material focus
- traditional approach
- manual work / processes
- manual drafting and design in manual routine tasks
- lecturing
- experts versus facilitators
- formal classroom
- real world environments
- move away from "traditional job / traditional teacher"
- use of outside resources
- power tools computer assisted
- time to cover curriculum – detail
- structured classroom

3. Emerging/Sustaining/Retiring Content Trends (Appendix C)

The DACUM process was able to provide a description of skills required for entry-level I.A. /Tech. Ed. teachers and general emerging/retiring education trends, however due to time restraints the process was unable to detail emerging/sustaining/retiring content trends in the specific teaching areas under the umbrella of I.A. / Tech. Ed.

To develop this important guiding component, the department Chair initiated a series of one-half day specific area workshops on June 11, 12 &13, 2008 with current teachers in the field to brain storm the topic. A detail of the workshops, process and results is included in Appendix C.

4. Graduate Skills and Abilities Chart

The Graduate Skills and Abilities Chart (*See Appendix D*) was developed during a faculty workshop on May 15, 2008 facilitated by the Curriculum Consultant and Curriculum Validation Facilitator.

The outcome of this workshop was a single, composite chart that outlines the graduate skills and abilities. The chart integrates:

- The competences identified in the Industry Occupational Analysis (DACUM) Chart,
- The College Wide Learning Outcomes (CWLOs),
- Revisions made by the Industrial Arts/Technology Teacher Education Faculty based on their assessment of what would constitute realistic learning expectations of the program.

This chart serves as the focus for curriculum renewal and the basis for the development of the Graduate Profile.

5. Graduate Profile (Appendix E)

Through the use of the *Graduate Skills and Abilities Chart*, the following Graduate Profile was developed by the Faculty, Curriculum Consultant, and Curriculum Facilitator at a workshop on May 16, 2008.

Upon successful completion of the program, the RRC Industrial Arts/Technology Teacher graduate should:

- A. Communicate effectively with students, parents, and colleagues in an education environment.
- B. Teach safety practices and procedures to students while modeling safe practices in classrooms and labs.
- C. Create inclusive learning environments that recognize and respect student's diversity, individual differences, perspectives and learning styles.
- D. Lead or support when appropriate, and contribute to motivating others.
- E. Demonstrate professionalism to students, peers, parents and the community following a professional code of conduct, school/division policies, and applicable laws and regulations.
- F. Design instruction applying curriculum guidelines, writing learning outcomes and using indicators of success including broad assessment, varied instructional techniques, and personalized instruction.

- G. Manage classrooms and labs in schools creating a safe and engaging learning environment.
- H. Assess/evaluate student performance applying summative and formative evaluation strategies, designing and applying assessment/evaluation tools, and reporting on student progress/achievement.
- I. Teach Industrial Arts/Technology using related tools and equipment safely, while leading students through design, development, application, and reporting phases of Industrial Arts labs/projects.
- J. Manage classroom and lab facilities ensuring equipment and facilities are safe, well maintained, and adequately stocked following school/division procedures regarding: maintenance, ordering, and purchasing.
- K. Use information and computer technologies as tools for instruction and administrative purposes.
- L. Learn continuously, keeping up-to-date with trends in education and industry.

6. Program Renewal Vision and Goals (Appendix F)

A half-day workshop was held on May 26, 2008 with Faculty, Program Chair, Curriculum Consultant, and Curriculum Validation Facilitator to identify a program vision and goals for program renewal. Utilizing the results of this workshop the vision statement was developed along with goals and objectives that will guide the program renewal activities over the next three to five years.

The program's **vision** is to be recognized as a national leader in Industrial Arts/Technology Teacher Education.

The following **goals** were identified to realize this vision:

1. To provide a synergistic learning experience where students can recognize linkages between courses, reflect on, apply, and be accountable for their learning through activities performed during the program.
2. To practice continuous improvement using quality assurance processes where faculty welcomes change while implementing research-based curriculum adaptations and revisions as a collegial group.
3. To emphasize and maintain a high-standard of hands-on instruction while ensuring that Industrial Arts/Technology Teacher Education evolves in step with changing technology in schools and in the community.
4. To provide leadership in Industrial Arts/Technology Teacher Education at provincial and national levels; leveraging the reputation and uniqueness of the RRC program.

5. To provide advanced courses for existing teachers, and to increase marketing of the program both within Manitoba and throughout Canada.
6. To provide instruction in the safe operation and maintenance of tools and equipment.
7. To model the appropriate physical environment for effective teaching and learning in Industrial Arts/Technology Education.
8. To encourage wellness of both faculty and students by providing opportunities for professional and personal development as well as encouraging a positive work-life balance.

7. Program Renewal Plan (Appendix G)

The Program Chair, with assistance from the Curriculum Consultant and The Curriculum Validation Facilitator, developed a program renewal plan incorporating information and research obtained as a result of all deliverables described above. The 8 point renewal plan is listed below:

1. Adapt a course in the fourth year of the program what will include topics learned in a number of course areas. Transference of learning will be a key topic in the course.

Implementation: Fall 2008 – Winter 2010

2. A curriculum committee will be established for the Industrial Arts/Technology Teacher Education program.

Implementation: Fall 2008 and ongoing

3. Ongoing research will continue to take place on emerging technology.

Implementation: Winter 2009 and ongoing

4. Faculty will participate in professional development focusing on CAD/CAM software and implementation of the software tools.

Implementation: Summer 2008 and ongoing

5. Faculty will offer professional development for advanced topics in Industrial Arts/Technology education.

Implementation: Spring 2009 and ongoing

6. A 30 credit hour program will be developed and presented to the Teacher Education and Certification Committee for salary recognition purposes.

Implementation: Winter 2009

7. A course will be redeveloped to include additional topics on the safe operation and maintenance of equipment and tools.

Implementation: Fall 2008 and ongoing development

8. In order to meet the demands of industry, a request for a larger space with better air quality will be forwarded to management.

Implementation: Summer 2008

8. Conclusions

The Curriculum Validation – Program Renewal process has provided a benchmark against which the renewal of the Industrial Arts/Technology Teacher Education program can be tracked and measured. The program renewal goals that were identified will ensure that the program is recognized as a leader in the preparation of graduates for the teaching of Industrial Arts/Technology Education in the public school system. The program renewal plan will serve to guide the Chair and Dean with the assignment of resources to accomplish the goals within a five-year time frame.

Appendix A - Environmental Scan and Key Findings

Environmental Scan

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UB
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	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBCO
Size of Program Number of students Number of Faculty for technical courses	<ul style="list-style-type: none"> • 58 Full Time Program, • 15 per year • 9 After Degree Program • 0 Accelerated Program <ul style="list-style-type: none"> • 9 	<ul style="list-style-type: none"> • 15 per year <ul style="list-style-type: none"> • Primarily use sessional teachers as needed 	<ul style="list-style-type: none"> • 15 per year <ul style="list-style-type: none"> • 11 (cross over with staff for Industrial Technology program) 	<ul style="list-style-type: none"> • 18 – 20 per year <ul style="list-style-type: none"> • No permanent, sessional only 	<ul style="list-style-type: none"> • Okanagan College: 15 (entire program) • UBCO: 6 to 11 per year <ul style="list-style-type: none"> • Okanagan College: 3 to 12 (varies from one course responsibility to full time) • UBCO: n/a
Credential Issued	Industrial Arts Technology Teacher (Full Time program): Industrial Arts Technology Teacher (After Degree program): Industrial Arts Technology Teacher (Accelerated program):	Bachelor of Education (Technology Education major)	Bachelor of Science, Technology Education major, Industrial Technology minor	Bachelor of Education (Intermediate/Secondary) Conjoint with the Diploma in Technology Education	Diploma in Trades Technology Education leading to the STEP (Trades Technology Education) program leading to a Bachelor of Education degree and qualification for a BC Professional Teaching Certificate.
Program Features	Program summary <ul style="list-style-type: none"> • A five year Integrated B.Ed./B.A. or B.Sc. degree delivered in conjunction with the University of Winnipeg. An After Degree Program is also available. • Students in this program do courses on site 	Program Summary <ul style="list-style-type: none"> • A two year post degree program leading to provincial certification to teach Technology Education Undergraduate Degree Program: <ul style="list-style-type: none"> • N/A After Degree program: <i>Length of time from</i>	Program Summary <ul style="list-style-type: none"> • The Technology Education curriculum is planned primarily for prospective teachers. • The program leads to a Bachelor of Science degree. • Meets requirements for entry into and completion of 	Program Summary <ul style="list-style-type: none"> • The Bachelor of Education (Intermediate/Secondary) Conjoint with the Diploma in Technology Education program, designed to prepare intermediate/secondary school (grades 	Program Summary <ul style="list-style-type: none"> • The program is three years old. • The three components in the complete training path to become a Trades Technology Teacher are: <ol style="list-style-type: none"> 1. Technical studies (66 credits): Completion of this 2 year

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<ul style="list-style-type: none"> Approximately 12 per year 3 full time plus part time for labs 	<ul style="list-style-type: none"> 125 total CTS program 19 Technical Education Option, 7 per year 1 Faculty, 6 sessional instructors 	<ul style="list-style-type: none"> BCIT: 22 per year UBC: 22 per year BCIT: 6 – 7 	<ul style="list-style-type: none"> 48 students, 12 per year No permanent staff, sessional teachers are contracted from local high schools on a course by course basis. 	
<p>Degree of Bachelor of Science in Occupational and Technical Studies (Technology Education major)</p>	<p>Bachelor of Education – Secondary Route</p> <p>B.Ed. (Careers and Technology Studies: Technology Education major)(Tech. Ed. Minor is also possible)</p> <p>(Note: there is no distinction upon graduation, between students who have entered the program via the journeyman route as opposed to those who have acquired their technical course credits at the University)</p> <p>One year post baccalaureate Diploma program</p> <p>Diploma in Education in Career and Technology Studies (CTS: Technology Education)</p>	<p>Bachelor of Education –Technology Studies major</p> <p>Diploma in Technology Studies Education</p>	<p>Bachelor of Education (Industrial Arts major)</p>	<p>Bachelor of Education (second area of concentration in Technology Education)</p> <p>DAUS (Diploma in Advanced Undergraduate Study) in Technology Education (Prerequisite is a B.Ed.)</p>
<p>Program Summary</p> <ul style="list-style-type: none"> The undergraduate Technology Education major is a 123-hour program that is designed to prepare students to teach technology education subjects in middle and high schools. An approved program for meeting licensure 	<p>Program Summary</p> <ul style="list-style-type: none"> A 4-year program; 1 pre-professional year plus 3 years in the Faculty of Education. The technology courses for the Technology Education major are taught both on campus and off campus, in various faculties. An after degree program is also available. 	<p>Program Summary</p> <ul style="list-style-type: none"> The Technology Teacher Education program for public school technical studies teachers is an affiliated cooperative program between BCIT and UBC. It has three components. <ul style="list-style-type: none"> 1. Technological Component Completion of a Diploma of two- 	<p>Program Summary</p> <ul style="list-style-type: none"> A four year program with the technology courses for the Industrial Arts major taught primarily on campus in the College of Engineering facilities by sessional staff. <p>Undergraduate Degree Program: <i>Length of time from</i></p>	<p>Program Summary</p> <ul style="list-style-type: none"> The B.Ed. degree is awarded upon successful completion of 60 credit hours of study in Education, taken concurrently, i.e., along with another Bachelor's degree, or consecutively, i.e., following another Bachelor's degree. <p>Students who have completed courses at</p>

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UB
Program Features (Cont'd)	<p>College and The University of Winnipeg in all years of the program.</p> <p>Undergraduate Degree Program: <i>Length of time from High School Grad to Teaching Qualification</i></p> <ul style="list-style-type: none"> • 5 years (program length is 5 years) <p>Division of Academic year</p> <ul style="list-style-type: none"> • September entry with Term 1 – September to December (12 weeks), Term 2 – January to mid April (12 weeks), Term 3 – mid April to June (4 week practicum) <p>Entrance Requirements</p> <ul style="list-style-type: none"> • Applicants must meet the entrance requirements for the University of Winnipeg: (High School – Manitoba Applicants) including: • Candidates must be high school graduates with standing in at least 28 credits which satisfy the Manitoba Education and Training Senior (1-4) high school program. • Candidates must present a minimum average of at least 60% on the best three courses in different subject areas from the Approved Course table below, including at least one of English 40 (2 	<ul style="list-style-type: none"> • 6 years <p>Division of Academic year</p> <ul style="list-style-type: none"> • September entry with: Fall term – Early Sept to early Dec, Winter term - early Jan to early April, Intersession 1 - mid May to early June and Intersession 2 - end of June to mid August <p>Entrance Requirements</p> <ul style="list-style-type: none"> • Students applying to the TE program at Acadia are expected to have a related degree (technology, science, engineering) with content background in at least one of the technology strands: 1) Communications Technology, 2) Energy, Power and Transportation Technology or 3) Production Technology • When interns are accepted into the B.Ed. (Secondary) at Acadia their university transcripts must demonstrate 30 credit hours in a public school teachable subject (called their 1st teachable) and 18 credit hours in a second public school teachable subject (called their 2nd teachable). There are several other course prerequisites that must be met. 	<p>teacher licensure programs.</p> <p>Undergraduate Degree Program: <i>Length of time from High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> • 4 years <p>Division of Academic year</p> <ul style="list-style-type: none"> • Typical Fall Term Sept 1 – Dec 20, typical Spring Term: Jan 22 – May 30 <p>Entrance Requirements</p> <ul style="list-style-type: none"> • General Entry Requirements: <ol style="list-style-type: none"> 1. First, you need to complete 30 semester credits of liberal education courses with a grade point average (GPA) of 2.5 or higher. 2. Next, you must take or be registered to take (proof of registration is required) the Pre-Professional Skills Test (PPST), either by computer or by written exam. 3. Finally, final acceptance to a specific program is completed in ED3100 Introduction to the Foundations of Education. <p>PLAR And Transfer Credit</p> <ul style="list-style-type: none"> • Advanced Placement and College-Level Proficiencies: The University's 	<p>7-12) and technology education teachers.</p> <ul style="list-style-type: none"> • This full-time program extends over four consecutive terms (May - August) enabling students to qualify for a teaching certificate within sixteen months. <p>Undergraduate Degree Program:</p> <ul style="list-style-type: none"> • N/A <p>After Degree program: <i>Length of time from High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> • 6 years total (5 year degree plus one year diploma) <p>Division of Academic year</p> <ul style="list-style-type: none"> • September entry with Fall semester Sept – Dec, Winter semester Jan – April, Intersession May – June, Spring semester May – August and Summer semester June – August. <p>Entrance Requirements</p> <ul style="list-style-type: none"> • A Bachelors Degree from a university recognized by Memorial University of Newfoundland; • Completed 36 credit hours in a subject listed under Academic Disciplines: Biochemistry, Biology, Canadian Studies, Chemistry, Earth Sciences, Economics, English, 	<p>Technology Teacher Education (TTTE) Diploma program at Okanagan College (includes six credits of first year English courses). The 66 credit TTTE program covers the general applications of trades technology, including health and safety, tools, and shop equipment. In addition the 6 key trades and technology areas of study are covered: carpentry and joinery, electronics, metal fabrication and machining, industrial design, drafting and design, and automotive technology. These areas correspond with the BC Ministry of Education's Technology Education Integrated Resource Packages (IRPs) prescribed learning outcomes</p> <p>2. Teaching studies (54 credits): Completion of a one year Secondary Teacher Education program with a Trades</p>

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<p>requirements to teach technology education in Virginia</p> <ul style="list-style-type: none"> One of five national programs awarded Outstanding Program status by the Council of Technology Teacher Education. <p>Undergraduate Degree Program:</p> <p><i>Length of time from High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> Usually 4 ½ years (via Engineering) <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Fall Session - end of Aug to beginning of Dec, Spring Session - mid Jan to end of April, and Summer Sessions: mid May to end of Aug (varied sessions of 4 to 14 weeks in length) <p>Entrance Requirements</p> <ul style="list-style-type: none"> Students applying for admission to the teacher education programs in technology education must: <ul style="list-style-type: none"> 1. complete at least one semester at Old Dominion University, 2. have a 2.75 grade point average overall, in the major, and in the professional education core with no grade less than C- in all courses taken in the major and in the professional education core, 	<p>Undergraduate Degree Program</p> <p><i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> 4 years (program length is 3 years) <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Fall Term - September to December, Winter Term - January to April, Spring Term - May & June and Summer Term - July & August. <p>Entrance Requirements</p> <ul style="list-style-type: none"> There is no direct entry from high school into the Bachelor of Education (B Ed) program in the Faculty of Education. Students must first complete at least 24 units of course weight from another Faculty or other accredited postsecondary institution that is transferable into their program. The University of Alberta reserves the right to use discretion in determining adequate levels of language proficiency to ensure success in academic programs. In some cases, additional English language testing, conducted by the Faculty of Extension, may be required to confirm English proficiency. <p>PLAR AND TRANSFER CREDIT</p> <ul style="list-style-type: none"> If you have completed postsecondary courses elsewhere, you may be eligible 	<p>year Technology Teacher Education at BCIT.</p> <p>2. Academic Component Completion of one-year 30 credits of university transfer Liberal Arts and science courses including six credits of English.</p> <p>3. Pedagogical Component Completion of one-year professional teacher education studies at UBC.</p> <ul style="list-style-type: none"> When all three of the above program components have been completed a Bachelor of Education Degree is awarded by UBC. <p>Undergraduate Degree Program</p> <p><i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> 4 years <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Level 1 (September - December, 15 weeks), Level 2 (January - May, 20 weeks), Level 3 (September - December, 15 weeks), Level 4 (January - May, 20 weeks) <p>Entrance Requirements</p> <ul style="list-style-type: none"> High school graduation English 12 or English-language proficiency Principles of Math 11 (C) or Academic Math 11 (C) or 	<p><i>High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> 4 years (program length is 4 years) <p>Division of Academic year</p> <ul style="list-style-type: none"> Regular Session: the session of academic study that begins in September and ends in April. Spring & Summer Session: the session of academic study that begins in mid-May and ends in mid-August. Classes in this session are offered in compressed time periods of approximately seven-week terms. <p>Entrance Requirements</p> <ul style="list-style-type: none"> Step 1: Secondary Level Standing - applicants must have complete Saskatchewan secondary level standing or equivalent. Step 2: Prerequisite Subjects for each College - applicants must have the 30-level subjects required for their college of choice. Students may be admitted to this college with one deficiency among these subjects. The deficient subject must be completed prior to the student entering their second year of study. <p>PLAR</p> <ul style="list-style-type: none"> The University of Saskatchewan accepts, for transfer of credit, courses from accredited institutions in Canada and elsewhere. 	<p>another university may apply to transfer into the concurrent degree program.</p> <p>After Degree program:</p> <p><i>Length of time from High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> 6 years <p>Division of Academic year</p> <ul style="list-style-type: none"> Fall Term - September to December, Winter Term - January to April, Intersession - (Fredericton only) May to June, Summer Session - July to August The normal credit hour load for a consecutive B.Ed. student (full-time) is 15 credit hours per term (30 credit hours per academic year). The maximum number of approved credit hours for which a student may register is normally 18 in any term (36 credit hours per academic year). Students may take up to 9 credit hours in Intersession. Students may take up to 9 credit hours in summer session <p>Entrance Requirements</p> <ul style="list-style-type: none"> To be admitted to the Consecutive B.Ed. Middle or Young Adult programs, students must have a major of 30 credit hours in one teachable subject and 18 credit hours in another teachable subject or a double minor of 24 credit hours in two different teachable subjects.

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Program Features (Cont'd)	<p>credits), Pre-Calculus Mathematics 40S or Applied Mathematics 40S.</p> <ul style="list-style-type: none"> Candidates must present five credits at the Senior 4 level which cover three different subject areas. Including both English and Mathematics in one of the following combinations: <ul style="list-style-type: none"> 1. English 40 (2 credits at the A or S level) Plus one of: Pre-Calculus Mathematics 40S, Applied Mathematics 40S, Consumer Mathematics 40S or A Language Credit from the Approved Course table or 2. English 40 (1 credit at the A or S level) , plus Pre-Calculus Mathematics 40S Special Admission is possible. <p>PLAR AND TRANSFER CREDIT</p> <ul style="list-style-type: none"> PLAR and Transfer Credit are possible - policies are in place. <p>Selection process</p>	<p>PLAR And Transfer Credit</p> <ol style="list-style-type: none"> Transfer credit may be given for individual courses taken at other accredited universities or institutions which have transfer credit agreements with Acadia. All courses transferred for credit must be directly applicable to the student's program of study at Acadia University. Transfer courses reduce the total number which must be taken for a degree at Acadia. Transfer credits should be distinguished from advance standing which is placement at a certain level in a specific subject by a school or department of the University. Credit cannot be given for non-university courses or for knowledge obtained elsewhere, however valuable it may be. Advance standing may be given for such knowledge, however. Credit is not given for courses taken elsewhere while a student is on academic dismissal from Acadia. 	<p>program for the evaluation of non-college learning which occurred prior to or outside a formal academic institution enables students to enrich or accelerate their program of study.</p> <ol style="list-style-type: none"> Such learning may be the result of a variety of life experiences, such as continuing education, work experience, or individual study. Advanced placement and university credit are not awarded on the basis of experience alone, but for the achievement of an advanced level of knowledge and/or skill. The methods of determining either recognition or university credit are predicated on prior learning which is considered to be at a university level. Each department determines the criteria, if any, which if satisfied, will result in advanced placement, waiver of a requirement, and/or the awarding of university credit. Assessment methods may involve a written examination, interview, skills evaluation. 	<p>Environmental Science, French, General Science, Geography, History, Mathematics (Pure and Applied Mathematics, Statistics), Physical Education, Physics, Political Science, Theatre Arts or Visual Arts;</p> <ul style="list-style-type: none"> Achieved an overall average of at least 65% in the courses chosen to meet b. above. <p>PLAR</p> <ul style="list-style-type: none"> Transcripts from Institutions other than Memorial University are to be submitted at the time of application. The Faculty reserves the right to deny admission to a candidate who, in the opinion of the Selections Committee, is deemed unsuitable for admission to a program <p>Selection process</p> <ul style="list-style-type: none"> In assessing applications to the Bachelor of Education (Intermediate/ Secondary) Conjoint with the Diploma in Technology Education Program, consideration will be given to the following: <ul style="list-style-type: none"> average in academic discipline courses 	<p>Technology Specialty at UBC Okanagan:</p> <ol style="list-style-type: none"> Academic studies: (30 credits): Completion of 30 credits of university courses acceptable to the BC College of Teachers. <ul style="list-style-type: none"> Students who complete the Technical studies (this TTTE Program) and the Teaching studies (the Secondary Teacher Education program with a Trades Technology Specialty) are eligible for the BC College of Teachers (BCCT) Permanent Standard Certificate, which allows the student to begin teaching at a public school. The standard certificate requires completion of 30 credits of academic studies, within five years, to be eligible for the full BC Professional Teaching Certificate and B.Ed. degree. <p>Undergraduate Degree Program: <i>Length of time from High School Grad to Teaching License</i></p> <ul style="list-style-type: none"> 4 years (2 years Okanagan College, 12 month UBC-O Trades

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<p>3. have passed PRAXIS I or achieved State Board of Education approved scores on the SAT or ACT,</p> <p>4 present written recommendations from two faculty members from the Occupational and Technical Studies Department, and</p> <p>1. have an interview with the program leader.</p> <ul style="list-style-type: none"> Although students may enroll in a limited number of education courses, admission into the teacher education program and passing PRAXIS I scores or approved equivalent test scores must be on file in the Teacher Education Services Office prior to students enrolling in any professional education practicum course. <p>PLAR And Transfer Credit</p> <ul style="list-style-type: none"> Arranged through Monarch TRANSFERmation (a massive online database of transfer information), available online and includes all courses that can transfer from U.S. institutions. <p>Selection process</p> <ul style="list-style-type: none"> Two levels: 	<p>to receive credit which will reduce the length of your degree.</p> <ul style="list-style-type: none"> A 30 credit Advanced Standing can be granted for relevant Journeyman Certification in CTS strands. The minimum required grade for courses to be credited toward the Diploma is C-. <p>Selection process</p> <ul style="list-style-type: none"> Admission is competitive based on a student's overall academic record. <p>After Degree program:</p> <ul style="list-style-type: none"> N/A <p>Post baccalaureate Program: <i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> 5 years (program length is 1 year) <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Fall Term - September to December, Winter Term - January to April, Spring Term - May & June and Summer Term - July & August. <p>Entrance Requirements</p> <ul style="list-style-type: none"> Normally, admission to a diploma program requires an undergraduate degree and a professional teaching certificate. <p>Selection process</p> <ul style="list-style-type: none"> Additional requirements may be set, and quotas may be imposed on 	<p>Applications of Math 11 (C)</p> <ul style="list-style-type: none"> Any Science 11 course The above requirements must be at C grade or better. Additionally, upon request, applicants must be prepared to submit an illustrated portfolio which demonstrates their technical experience, accomplishments, aptitude and capability. All applicants must submit a current resume with their application. <p>PLAR</p> <ul style="list-style-type: none"> Opportunities exist within the Technology Teacher Education program at BCIT for students to receive Prior Learning Assessment Recognition (PLAR) credit for skill and knowledge they possess that aligns with the TTED program goals and the teachable technical subject areas in schools. When applying for PLAR credit, students must illustrate their applicable skill and knowledge through a variety of testimonials, portfolios, demonstrations, and tests. <p>Selection process</p> <ul style="list-style-type: none"> Extensive technical experience aligned with program goals C+ or better grades Completed senior secondary or post-secondary math, 	<ul style="list-style-type: none"> In most cases, credit is awarded on a course-by-course basis for courses equivalent to those taught at the University of Saskatchewan. The purpose of evaluating transfer credit is to give students and applicants fair and reasonable credit for academic work which has been undertaken at another institution, and to reduce the likelihood of a student repeating academic work in which he or she has already demonstrated competence. Authority for evaluation of transfer credit rests with the Admissions Office, and is based on published transfer credit policy and an examination of published accreditation guides, transfer credit guides, calendar course descriptions, detailed course outlines, precedent, and the advice of colleges and departments. <p>Selection process</p> <ul style="list-style-type: none"> Education (Automatic Direct Entry) <p>Graduation requirements</p> <ul style="list-style-type: none"> Promotion and Graduation Standards in the College Involve Three Averages: <ul style="list-style-type: none"> 1. The overall Cumulative Weighted Average (C.W.A.) based on all courses taken for credit 	<p>PLAR</p> <ul style="list-style-type: none"> Students may obtain advanced credit of up to 15 credit hours toward the B.Ed. for education courses which have been taken at this or another institution, where the grade received is 'C' or higher, and which meet program requirements. <p>Selection process</p> <ul style="list-style-type: none"> Applicant must have completed an undergraduate degree with a minimum cumulative grade point average of 2.7. Admission to the Bachelor of Education is highly competitive, the minimum cgpa stated may not be sufficient to secure a place <p>Graduation requirements</p> <ul style="list-style-type: none"> The B.Ed. degree is awarded upon successful completion of 60 credit hours of study in Education, taken consecutively, i.e., following another Bachelor's degree. A student in the B.Ed. program having a minimum cumulative grade point average of 3.8 in Faculty of Education courses, and no grade below C, and whose Field Studies practicum is deemed satisfactory for this degree by the Dean of Education after consultation with the faculty members who supervised the student's practicum, shall be awarded the B.Ed. degree

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Program Features (Cont'd)	<ul style="list-style-type: none"> Done in conjunction with U of W. Applicants screened for entrance requirements, then date of application, then GPA <p>Graduation requirements</p> <ul style="list-style-type: none"> Minimum 2.0 GPA. The 150 credit hours presented for graduation must meet all degree requirements. <p>After Degree program: <i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> 6.5 to 7 years (depending upon PLAR) (program length is 5 years) <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Term 1 – September to December (12 weeks), Term 1 – September to December (12 weeks), Term 2 – January to mid April (12 weeks) and Term 3 – mid April to June (8 week practicum) <p>Entrance Requirements</p> <ul style="list-style-type: none"> An undergraduate degree from a Manitoba university, or its equivalent, with a minimum of 18 credit hours in a second teaching area 	<p>Selection process</p> <ul style="list-style-type: none"> An important interview process to assess aptitude, problem solving abilities etc. Acceptance decisions are made on a student by student basis. <p>Graduation requirements</p> <ul style="list-style-type: none"> The Nova Scotia government certifies teachers in TE based on their completion of a B.Ed (63 credit hours) and demonstration of either a major (30 credit hours) or minor (18 credit hours) outside of the B.Ed. credits. <p>Post baccalaureate Program:</p> <ul style="list-style-type: none"> N/A 	<p>and/or minimum achievement level on nationally standardized tests.</p> <ul style="list-style-type: none"> The departments also have the prerogative of determining which courses, if any, may be evaluated through other forms of proficiency assessment. The advanced placement process may involve a fee, nationally standardized proficiency examinations (e.g., College Board Advanced Placement Examination) and some options pursued at the University is completed in ED3100. <p>Introduction to the Foundations of Education.</p> <p>Graduation requirements</p> <ul style="list-style-type: none"> Satisfy admission requirements - need to be admitted as a degree-seeking student. Satisfy overall degree requirements Minimum 128 semester credits Overall GPA - minimum 2.00 Complete appropriate Liberal Education requirements or Honors Program requirements 	<ul style="list-style-type: none"> overall academic performance; and personal statement, references and resume as outlined on the application to the Faculty <p>Graduation requirements</p> <p>A candidate for the degree of Bachelor of Education (Intermediate/ Secondary) conjoint with the Diploma in Technology Education shall complete 66 credit hours including a non-credit field experience, 27 credit hours in Intermediate/ Secondary Education, 24 credit hours in Education, and a 15 credit hour internship</p> <p>Post baccalaureate Program:</p> <ul style="list-style-type: none"> N/A 	<p>Technology, plus 30 additional credit hours)</p> <p>Division of Academic year</p> <ul style="list-style-type: none"> Okanagan College: 4 semesters over two years UBC Okanagan 4 terms : (Summer - July & August) and Winter) over two years <p>Entrance Requirements</p> <p>Okanagan College Academic Requirements:</p> <ul style="list-style-type: none"> Regular Applicant: A regular applicant will have a BC High School graduation or equivalent or will be currently completing grade 12. A minimum grade of 60 percent in one of: English 12, TPC 12 (Technical and Professional Communications) or ABE Provincial Level English, or, a minimum score 24/40 (level 4) on the LPI (Language Proficiency Index). A minimum grade of 60 percent in one of: Principles of Mathematics 11 or Applications Mathematics 11 A minimum grade of 60 percent in any Science 11 course Mature

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<p>1. general university entrance</p> <p>2. College of Education entrance plus Continuous Policy</p> <p>Graduation requirements</p> <ul style="list-style-type: none"> Students in technology education licensure programs must have : <ul style="list-style-type: none"> a 2.75 grade point average overall, in the major, and in the professional education core, earned 123 credit hours, earned a passing grade in student teaching, passage of the Exit Examination of Writing Proficiency and completed the senior assessment. <p>After Degree program:</p> <ul style="list-style-type: none"> N/A <p>Post baccalaureate Program:</p> <ul style="list-style-type: none"> N/A 	<p>particular diploma programs.</p> <p>Graduation requirements</p> <ul style="list-style-type: none"> The minimum required grade for courses to be credited on a Diploma program is 1.7 (on a five-point scale). 	<p>physics, chemistry and biology courses</p> <ul style="list-style-type: none"> Completed industrial/technology education and/or fine arts courses Completed all or majority of university transfer liberal arts and science courses. The six credits in English should be completed first especially if the applicant will not have all 30 liberal arts credits complete prior to attending UBC. Completed secondary or post-secondary computer applications courses in fundamental in the use of MS Office Suite, engineering graphics and design software. All applicants must submit the following three confidential letters of reference: (confidential letters of reference are to include the referee's phone number, be signed by the referee and submitted in an envelope with the referee's signature across the sealed flap): <ul style="list-style-type: none"> A character reference letter supporting suitability for teaching A technical reference letter supporting technical capability and experience A reference letter outlining experience and capability of working with young people <p>Graduation requirements The Liberal Studies requirement for admission is 30 credits (10 courses) of university transfer</p>	<p>towards the B.Ed. degree.</p> <p>3. The External Weighted Average (EX.W.A.) based on the courses credited on the External component of the B.Ed. degree program.</p> <p>3.The Education Weighted Average (ED. W.A.) based on the courses credited on the Education component of the B.Ed. degree program.</p> <p>After Degree program:</p> <ul style="list-style-type: none"> N/A <p>Post baccalaureate Program:</p> <ul style="list-style-type: none"> N/A 	<p>with Distinction</p> <p>Entrance Requirements</p> <ul style="list-style-type: none"> Students who hold a B.Ed. degree or the equivalent (e.g. certified teachers with a BA or BT) are eligible for admission to the DAUS (Diploma in Advanced Undergraduate Study). <p>PLAR</p> <ul style="list-style-type: none"> Students may not transfer more than 12 credit hours of work from another university for credit toward the DAUS. No surplus credits from the B.Ed. other than extra courses taken in the final year may be transferred in for credit. No courses taken prior to enrolment in the B.Ed. may be transferred in for credit. When applying for the DAUS, students may transfer only 12 credit hours taken prior to admission to the program. <p>Graduation requirements</p> <ul style="list-style-type: none"> A grade of D shall meet the prerequisite requirements for DAUS courses unless otherwise stated in the Calendar. In course offerings of other Faculties/ Departments, students must meet the prerequisite requirements of that Faculty/Department .

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Program Features (Cont'd)	<ul style="list-style-type: none"> On the basis of prior learning assessment of industrial arts/technology course work in an undergraduate degree, credit could be granted for up to 30 credit hours of industrial arts/technology course work in the program. <p>Selection process</p> <ul style="list-style-type: none"> Done in conjunction with U of W. Applicants screened for entrance requirements, then date of application, then GPA <p>Graduation requirements</p> <ul style="list-style-type: none"> Minimum 2.0 GPA. The 150 credit hours presented for graduation must meet all degree requirements. <p>Post baccalaureate Program:</p> <p><i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> 5 years (program length is 1 year) <p>Division of Academic year</p> <ul style="list-style-type: none"> September entry with Term 1 – September to December (12 weeks), Term 2 – January to mid April (12 weeks), Term 3 – mid April to June) (12 		<ul style="list-style-type: none"> Complete major program requirements Major course credits - varies by major GPA - either 2.25 or 2.50, varies by major Complete minor program requirements (if applicable) Minor course credits - varies by minor GPA - minimum 2.00, varies by minor Complete elective credits (if applicable) <p>After Degree program:</p> <ul style="list-style-type: none"> N/A <p>Post baccalaureate Program:</p> <ul style="list-style-type: none"> N/A 		<p>Applicants who do not have high school graduation may apply as a mature student provided that they are at least 19 years of age and have not attended secondary school on a full time basis for a for a minimum period of one year. Mature applicants will be subject to the same academic entrance requirements that apply to regular applicants.</p> <ul style="list-style-type: none"> All applicants must submit a portfolio that includes the following: <ul style="list-style-type: none"> a resume a letter of intent that outlines the applicant 's interest in the TTTE program and explains why he/she should be considered for entry into the program a letter of reference addressing the applicant 's technical experience and ability a letter of reference addressing the applicant 's experience and ability working with youth an overview of the applicant 's practical experience

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		<p>courses, where 6 of these credits are in English (English Literature and English Composition). This requirement may be subsumed under a Baccalaureate Degree.</p> <ul style="list-style-type: none"> • The Technical Studies requirement for admission is 60 credits in Information Technology, Power and Energy Technology, Materials and Products Technology and Systems Integration Technology. • Pedagogical or Professional Studies component is completed in a one-year full-time, 60 credit program at UBC. The liberal studies requirement normally takes one year. The technical studies requirement at BCIT normally takes two years <p>After Degree program:</p> <ul style="list-style-type: none"> • N/A <p>Post baccalaureate Program: <i>Length of time from High School Grad to IA/Tech Ed Teaching Qualification</i></p> <ul style="list-style-type: none"> • B. Ed. plus one year. <p>Division of Academic year</p> <p>Not all courses in a Diploma will be offered every year or every term. Teachers who work full-time will find many classes are scheduled between 4:30 - 7:30 during the fall and winter sessions. Many courses are offered in summer session.</p>		<ul style="list-style-type: none"> • A grade of C shall be the minimum acceptable grade in courses for the DAUS. <p>No course can be credited without prior approval of a faculty advisor.</p>

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Program Features (Cont'd)	<p>weeks including practicum</p> <p>Entrance Requirements</p> <ul style="list-style-type: none"> • Completion of a Bachelor of Education degree. • Preference will be given to those applicants having completed a B.Ed. program focusing on secondary school teaching. • On the basis of a prior learning assessment of the course work in the Bachelor of Education program, credit is granted for 24 credit hours of educational foundations, basic teaching methodology, and the school experiences towards the 60 credit hour diploma programs. <p>Selection process</p> <ul style="list-style-type: none"> • Done in conjunction with U of W. Applicants screened for entrance requirements, then date of application, then GPA. <p>Graduation requirements</p> <ul style="list-style-type: none"> • Minimum 2.0 GPA. • The 150 credit hours presented for graduation must meet all degree requirements. 				<p>transcripts for and/or post secondary training Personal interview</p> <ul style="list-style-type: none"> • applicants who meet the academic entrance requirements will be selected on the basis of for a personal interview. • the selection panel members will choose 18 program participants based on the applicants portfolio and responses to a series of questions in a 20 min. personal interview <p>UBC Okanagan Admission Requirements:</p> <ul style="list-style-type: none"> • GPA: a GPA of at least 65% based on completion of 66 UBC Okanagan-equivalent credits in either the BCIT Technology Teacher Education Diploma (BCIT-TTED), the Okanagan College Trades Technology Teacher Education Diploma (OC-TTED), or equivalent acceptable in content to the Faculty of Education; • Completion of 66 UBC Okanagan equivalent credits in the two-year BCIT-TTED, two-year OC-TTED, or

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
		<p>Entrance Requirements</p> <ul style="list-style-type: none"> • Bachelor of Education <p>PLAR</p> <ul style="list-style-type: none"> • Up to 18 credits of appropriate UBC course work can be taken prior to enrolling in the Diploma and 12 credits can be taken at another institution. <p>Selection process</p> <ul style="list-style-type: none"> • Admission to the UBC Diploma in Education is open to all applicants who hold an acceptable degree from a recognized university. • Some Diplomas require particular prerequisites although no particular degree standing is required. • Many Diplomas are only open to teachers with a Bachelor of Education and some Diplomas are designed for educators who teach in other areas. <p>Graduation requirements</p> <ul style="list-style-type: none"> • The Diploma in Education requires the completion of 30 credits of senior coursework (courses numbered 300 or higher) with an average standing of 65%. • The courses must be complete within five years. 		

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UB
					<p>equivalent acceptable in content to the Faculty of Education;</p> <p>English requirement: 6 credits of approved English with an average of 65% or greater. A minimum 3 credits must be in English literature. The 6 credits of approved English literature and composition may be satisfied with coursework at the 100, 200, 300, and/or 400 level.</p> <ul style="list-style-type: none"> • 24 credits of university transferable Arts ; and/or Science coursework for two-year BCIT-TTED graduates; • 30 credits of university transferable Arts and/or Science coursework for two-year OC-TTTEED graduates. <p>PLAR And Transfer Credit</p> <ul style="list-style-type: none"> • Credit for PLA (Prior Learning Assessment) may be granted for demonstrated knowledge of skills that are verifiable, current and consistent with programs and courses offered at Okanagan College. • Where PLA credit is granted, it shall be in accordance with Okanagan College policy and procedures

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Program Features (Cont'd)					<p>Selection process</p> <ul style="list-style-type: none"> • applicants who meet the academic entrance requirements will be selected on the basis of their portfolio for a personal interview. • the selection panel members will choose 18 program participants based on the applicants portfolio and responses to a series of questions in a 20 min. personal interview. <p>Graduation requirements</p> <ul style="list-style-type: none"> • The requirement for receiving the Trades Technology Teacher Education Diploma is completion of 66 credits with a minimum grade point average (GPA) of 65% in the TTTE program. • Completion of your Bachelor of Education degree requires 60 university transferable academic credits.
Curriculum Model	<p>Experiential Component</p> <ul style="list-style-type: none"> • Each student receives 24 weeks of student teaching practicum throughout the total program. <p>Program Majors</p> <ul style="list-style-type: none"> • Major: Industrial Arts with a minor in a second teachable 	<p>Experiential Component</p> <ul style="list-style-type: none"> • The Acadia TE program offers 20 weeks of practicum which includes approximately 80% school-based teaching and a 20% industrial experience. <p>Program Majors</p> <ul style="list-style-type: none"> • B.Ed. 	<p>Experiential Component</p> <ul style="list-style-type: none"> • Full-time teaching with guidance and supervision by University supervisors and assigned school personnel. • Graded Satisfactory/Unsatisfactory only for 12 credits. 	<p>Experiential Component</p> <ul style="list-style-type: none"> ▪ The non-credit early field experience shall include a minimum of thirty hours of school visitation during the second semester of the program. • The division of time spent teaching in 1st 	<p>Experiential Component</p> <ul style="list-style-type: none"> • a 12-week practicum during the Winter Session, Term 2 at UBC Okanagan • 18 credit hours <p>Graduated teaching responsibility gradually leading up to a 80% teaching load.</p>

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<p>Experiential Component</p> <ul style="list-style-type: none"> • Student Teaching is fulltime for fourteen weeks total, five days per week, full semester • 12 credits <p>Prerequisites: completion of the approved teacher education program in the major area, departmental</p>	<p>Experiential Component</p> <ul style="list-style-type: none"> • The Secondary Education route includes 14 weeks of student teaching. Students enrol in the Introductory Professional Term (5 weeks of student teaching) and the Advanced Professional Term (9 weeks of student teaching). 	<p>Experiential Component</p> <ul style="list-style-type: none"> • The first UBC term is course-intensive with a two week practicum in the schools. <p>The second UBC term involves a 13 week practicum in a middle or secondary school.</p> <p>Program Majors</p> <ul style="list-style-type: none"> • Technology Studies major 	<p>Experiential Component</p> <ul style="list-style-type: none"> • The University of Saskatchewan Internship is a sixteen week teaching experience offered to students beginning in August entering the final year of their education degree program. 	<p>Experiential Component</p> <ul style="list-style-type: none"> • The school-based experiences component of the B.Ed. program involves 17 weeks of school placements constituting 15 credit hours. • These field experiences involve two weeks of pre-practicum

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Curriculum Model (cont'd)	<p>Program Streams</p> <ul style="list-style-type: none"> • Full Time program, B.Ed., B.A., & Diploma in Industrial Arts Teacher Education • After Degree program, B.Ed., & Diploma in Industrial Arts Teacher Education • Accelerated program, Diploma in Industrial Arts Teacher Education <p>Delivery Options</p> <ul style="list-style-type: none"> • Full time only 	<p>(Technology Education major)</p> <p>Program Streams</p> <ul style="list-style-type: none"> • None <p>Delivery Options</p> <ul style="list-style-type: none"> • Full time only 	<p>Program Majors</p> <ul style="list-style-type: none"> • Technology Education <p>Delivery Options</p> <ul style="list-style-type: none"> • Primarily full time, some professional courses can be taken online 	<p>and 2nd teachables varies from school to school.</p> <p>Program Majors</p> <ul style="list-style-type: none"> • Technology Education <p>Program Streams</p> <ul style="list-style-type: none"> • None <p>Delivery Options</p> <ul style="list-style-type: none"> • Full time only 	<ul style="list-style-type: none"> • This is then slowly reduced back down to about a 10% load as the experience ends. <p>Program Majors</p> <ul style="list-style-type: none"> • Trades Technology Education Specialty <p>Program Streams</p> <ul style="list-style-type: none"> • none <p>Delivery Options</p> <ul style="list-style-type: none"> • Full time
Curriculum Content	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> • See appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> • Course outlines are not available online. 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> • See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> • None 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> • See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> • Technological Studies Course descriptions: 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> • See appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> • None 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> • See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> • Okanagan College Course descriptions:

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<p>approval, passing scores on PRAXIS I or State Board of Education approved SAT or ACT scores, passing scores on the appropriate PRAXIS II content examination, and permission of the director of teacher education services.</p> <ul style="list-style-type: none"> Available for pass/fail grading only. <p>Program Majors</p> <ul style="list-style-type: none"> Technology Education <p>Delivery Options</p> <ul style="list-style-type: none"> Some part time is possible (primarily for military personal) 	<p>Students in the Introductory Professional Term usually teach in their Minor subject specialization, while students enrolled in the Advanced Professional Term usually teach in their Major subject specialization.</p> <ul style="list-style-type: none"> Three weeks are also spent in the Public System in CTS facilities (over and above regular practicum time) <p>Program Majors</p> <ul style="list-style-type: none"> CTS: Technology Education <p>Program Streams</p> <ul style="list-style-type: none"> B.Ed. (Careers and Technology Studies major) (CTS minor is also possible) One year post baccalaureate Diploma program <p>Delivery Options</p> <ul style="list-style-type: none"> The Faculty of Education offers some courses online. The One Year post baccalaureate Diploma program may be taken part-time, but students are normally expected to complete the requirements within four years. 	<p>Program Streams</p> <ul style="list-style-type: none"> Bachelor of Education – Technology Studies major Diploma in Technology Studies Education <p>Delivery Options</p> <ul style="list-style-type: none"> BCIT: Only full time students <p>UBC: Some UBC courses and Diplomas are also offered through Distance Education</p>	<ul style="list-style-type: none"> Each intern is assigned to a cooperating teacher who is responsible for daily supervision and evaluation. <p>Intern placements are located in urban Saskatoon, surrounding school systems and rural school divisions in the centre of the province. Internship inservices are provided by College Supervisors at specific locations to facilitate a sequential and developmental approach.</p> <ul style="list-style-type: none"> College Supervisors also complete four in-class observations of each intern during the program. <p>Program Majors/Streams</p> <ul style="list-style-type: none"> Major –Industrial Arts Minor – 18 credits in an acceptable teaching area <p>Program Streams</p> <ul style="list-style-type: none"> B.Ed.(Industrial Arts major) <p>Delivery Options</p> <ul style="list-style-type: none"> Full time only 	<ul style="list-style-type: none"> experiences to be completed before entering the 15 week practicum. <p>Program Majors</p> <p>A major in Technology Education is not available, only a minor in Technology Education is possible</p> <p>Delivery Options</p> <ul style="list-style-type: none"> Full-time or part-time
<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> For student access only, not generally public 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> None available 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> http://www.cust.educ.ubc.ca/programs/tsed/ 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> http://www.usask.ca/education/indexfiles/course mat.htm 	<p>Course titles and Course hours (credit and/or contact)</p> <ul style="list-style-type: none"> See Appendix <p>Link to syllabus and/or course outlines if they are available</p> <ul style="list-style-type: none"> Course outlines are not available online

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Curriculum Content (cont'd)			http://www.bemidjistate.edu/academics/catalog/06catalog/IT/courses.html#IT2100		http://www.okanagan.bc.ca/calendar/course-descriptions/trades/trades_technology_teacher_education.html <ul style="list-style-type: none"> • UBC Okanagan : Only available online through WebCT
Student assessment	<p>Content theory assessment</p> <ul style="list-style-type: none"> • The entire spectrum of assessment tools is used depending upon the instructor <p>Skills assessment</p> <ul style="list-style-type: none"> • Labs written in lesson plan format and used for reflection. • Mastery of items on a check list based on lesson outcomes. • Micro teaching experience to apply skills. <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> • Practicum assessment is a pass/fail based on a pass/fail based on a skills list rubric and reflection. 	<p>Content theory assessment</p> <ul style="list-style-type: none"> • Varies by teacher <p>Skills assessment</p> <ul style="list-style-type: none"> • Varies by teacher <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> • A standard guide booklet is used. Rubrics are used for assessment, but there is lots of latitude to allow for growth. • A final report is created by the cooperating teacher in collaboration with the college supervisor. • Final grade is a pass/fail. 	<p>Skills assessment</p> <ul style="list-style-type: none"> • Varies by instructor <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> • Student Teacher Supervisor Observation Form: http://bsued.bemidjistate.edu/forms/Supervisor/Supervisor_observation_form.pdf • Professional Dispositions Rubric: http://bsued.bemidjistate.edu/forms/studentCE/student_Dispositions_rubric.pdf • Professional Dispositions Assessment Form: http://bsued.bemidjistate.edu/forms/studentCE/student_disposition_faculty.pdf 	<p>Content theory assessment</p> <ul style="list-style-type: none"> • Varies by instructor <p>Skills assessment</p> <ul style="list-style-type: none"> • Varies by instructor <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> ▪ Check list rubrics ▪ Day by day diary ▪ Pass/fail grade 	<p>Content theory assessment</p> <ul style="list-style-type: none"> • Okanagan College: determined by each instructor • UBC Okanagan: determined by each instructor <p>Skills assessment</p> <ul style="list-style-type: none"> • Okanagan College: determined by each instructor, however is not as intensive as is required by journeyman requirements. • UBC Okanagan: determined by each instructor <p>Assessment practices for any experiential components</p> <p>Okanagan College:</p> <ul style="list-style-type: none"> • Only micro teaching is done at Okanagan College, assessment is determined by each instructor. <p>UBC Okanagan:</p> <ul style="list-style-type: none"> • Grading for the practicum is on a PASS/FAIL basis, and evaluation of the practicum is provided by means of a variety of reporting mechanisms.

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<p>Content theory assessment</p> <ul style="list-style-type: none"> Instructor specific <p>Skills assessment</p> <ul style="list-style-type: none"> Instructor specific <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> Pass/fail Portfolio requirements include: lesson plans, video sample (student teacher created), instructions sheets, 2 evaluations from cooperating teacher, school administrator evaluation and supervising teacher evaluation. Portfolio is assessed by university supervisor <p>Practicum Evaluation: http://education.odu.edu/tes/pdf/2006_June_Practicum_Eval.pdf</p>	<p>Content theory Assessment</p> <ul style="list-style-type: none"> Faculty use assessment tools from across the available spectrum <p>Skills assessment</p> <ul style="list-style-type: none"> Currently under Review <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> For credit assessment, pass/fail based on a check list that is consistent throughout the College. <p>See http://www.uofaweb.ualberta.ca/field_experiences/nav03.cfm?nav03=19819&nav02=26475&nav01=25853</p>	<p>Content theory assessment</p> <p>BCIT: Across the spectrum of assessment tools, depending upon the instructor</p> <p>UBC:</p> <ul style="list-style-type: none"> Across the spectrum of assessment tools, depending upon the instructor <p>Skills assessment</p> <p>BCIT:</p> <ul style="list-style-type: none"> Varies by instructor and course. Includes: self evaluation, rubric check lists, peer evaluation and micro teaching. <p>UBC:</p> <ul style="list-style-type: none"> Varies by instructor and course. Includes: self evaluation, rubric check lists, peer evaluation and micro teaching. <p>Assessment practices for any experiential components</p> <p>BCIT:</p> <ul style="list-style-type: none"> No experiential component at BCIT <p>UBC:</p> <ul style="list-style-type: none"> 13 week period Pass/fail, based on a check list rubric based on the role of a teacher 	<p>Content theory assessment</p> <ul style="list-style-type: none"> A variety of methods are employed dependent upon instructor. Final mark is usually a combination of 30% content plus 70% practical. <p>Skills assessment</p> <ul style="list-style-type: none"> Check lists based upon rubrics. <p>Assessment practices for any experiential components</p> <ul style="list-style-type: none"> The Extended Practicum involves one term, full-time, of teaching experience. Teacher candidates must have earned a C.W.A. of a least 60% in their External and in their Education courses. <p>Teacher candidates in the secondary option must also have a minimum average of 60% in each of Teaching Areas I and II.</p> <ul style="list-style-type: none"> Teacher candidates must have completed the first three years of the program. A major purpose of student teaching is to explore initial feelings about teaching. 	

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Student assessment (cont'd)					<p>provided by means of a variety of reporting mechanisms.</p> <ul style="list-style-type: none"> • Regular feedback in the form of oral and written observations by the sponsor teacher(s) and the faculty supervisor • A Mid-Term Practicum Report and Final Practicum Report written collaboratively by the sponsor teacher(s) and faculty supervisor, and discussed at a triad meeting with the student teacher. and written observations by the sponsor teacher(s) and the faculty supervisor • A Mid-Term Practicum Report and Final Practicum Report written collaboratively by the sponsor teacher(s) and faculty supervisor, and discussed at a triad meeting with the student teacher.

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
			<ul style="list-style-type: none"> • Observation and reflection about, teaching is important as well as to have the opportunity to work with students individually, in small groups, and in whole-class lessons. • Teaching should be from a lesson plan basis. • Recommendation for a teaching certificate is not included in in student teaching; however, it is a major goal of internship. • A team approach involving intern, co-operating teacher and the college supervisor characterizes the internship. • The practicum is assessed as pass/fail based on an extensive evaluation done by the teacher candidate, cooperating teacher and college supervisor. • The assessment relies upon an extensive check list of descriptors that describe the professional teacher 	

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Current and coming challenges	<ul style="list-style-type: none"> • The current model works well • Difficult to attract the number of students to supply the number of graduates that are required by School Divisions. • Difficult to keep current regarding professional development. • Keeping current with technology is an issue. However the RRC setting does offer the opportunity to share equipment and technology with other departments. 	<ul style="list-style-type: none"> • Providing the broad based technical background that students need in this program. • Currently working on building up a Bachelor of Technology program that could better prepare (and lead directly to) this program. • Staying current with the Nova Scotia curriculum and leading edge changes (like Bio Tech). • Advertising this program to potential students. 	<ul style="list-style-type: none"> • Recruiting students to the program (school councilors seem not to be informing students of the career opportunities in Technology Education). • Providing enough graduates for the existing and coming demands in the field. • Maintaining students in the education field once they graduate (they are often swept up by industry because of their technical skills) • Funding constant software upgrades to keep technology current. • Safety issues (there are no state regulations in place for technology classrooms). 	<ul style="list-style-type: none"> • Dept of Ed. Is currently moving into a different "flavor" of technology education which looks more like "traditional Industrial Arts skills training". • The challenge is meeting the needs of the province. 	<p>Okanagan College:</p> <ul style="list-style-type: none"> • The major challenge at the moment is recruitment of students given the current strong labour markets. • The College has had to switch strategy from recruitment geared at attracting people from industry with some technical background to attracting students directly out of high school who have shown an interest in technical studies. <p>UBC Okanagan:</p> <ul style="list-style-type: none"> • Student numbers, • Maintaining adequate funding for program, • Schools need for teachers not reflected in government encouragement of programs, and • the consequences of some school level negative decisions that are being made regarding Technology Programs
Curriculum Renewal	<p>Process and frequency</p> <ul style="list-style-type: none"> • Each academic program has an opportunity to be nominated by the Senior Academic Committee (SAC) for ProgramRenewal on a 5-year cycle and to receive assistance in establishing or renewing its curriculum for 	<p>Process</p> <ul style="list-style-type: none"> • This process is currently being revisited. Considerable interest is being shown in the Red River Program Renewal model. 	<p>Process</p> <ul style="list-style-type: none"> • A mandatory validation process by the Minnesota State Board of Teaching <p>Frequency</p> <ul style="list-style-type: none"> • Every 5 years 	<p>Process</p> <ul style="list-style-type: none"> ▪ Currently on an ad hoc basis as initiated by faculty. <p>Frequency</p> <ul style="list-style-type: none"> ▪ Approximately every five years. 	<p>Process</p> <ul style="list-style-type: none"> • Okanagan College: on-going student evaluation, yearly meetings with instructors, feedback from schools via College instructors. • UBC Okanagan: On an informal ongoing basis

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<ul style="list-style-type: none"> • Attracting students • Meeting the demand for teachers in Virginia. 	<ul style="list-style-type: none"> • Attracting students to the program given current economic conditions in Alberta. • Reviewing ways to increase student technology skill development. • Technology is up to date however lab size is a concern. 	<p>BCIT:</p> <ul style="list-style-type: none"> • Enrolment is a concern given the strong economy and attractiveness of immediate job availability. <p>Technology is not a concern, the program is able to keep up with technology and also occasionally access current technology in other departments of BCIT.</p> <p>UBC:</p> <ul style="list-style-type: none"> • Attracting students to the program given the high demand for Technology Teachers 	<ul style="list-style-type: none"> • Schools and School Boards seem pleased with the program graduates. • The biggest challenge is maintaining the integrity of the program within the University. • The program is struggling to “find and maintain its place” in the University structure. 	
<p>Process</p> <ul style="list-style-type: none"> • Faculty meeting <p>Frequency</p> <ul style="list-style-type: none"> • Continuous – at least one specific meeting per year • Last major change in 2005 	<p>Process</p> <ul style="list-style-type: none"> • The entire undergraduate program is currently in an internal renewal. <p>Frequency</p> <ul style="list-style-type: none"> • Approximately every five years 	<p>Process Frequency</p> <p>BCIT:</p> <p>Annual PAC (Program Advisory Committee) meeting are held to review the program. The committee includes all stake holders including: School based personal, District based, Government and faculty.</p>	<p>Process and frequency</p> <ul style="list-style-type: none"> • Content courses are driven by the Department of Education Curriculum, which is Evergreen. • Professional courses like the technical methods courses are reviewed yearly by staff, students and employers. Change is made by instructors 	

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Curriculum Renewal (cont'd)	<p>change and/or improvement.</p> <p>The Program Renewal process is collaborative and requires that a Program and Curriculum Development department Curriculum Consultant works closely with the academic departments to identify the requirements for a program's updating and renewal.</p> <ul style="list-style-type: none"> • Course and program changes are achieved through a collaborative working agreement with the U of W. • An advisory committee for the program is in place consisting of representatives from: Manitoba Teacher's Society, Manitoba Association of School Trustees, Manitoba Association of School Superintendents, Manitoba Education, & Youth, Educators of Business & Information Technology, Technology Educators Association of Manitoba, Vocational Teacher's Association of Manitoba, a Student Representative from each program within the Teacher Education 				<p>Frequency</p> <ul style="list-style-type: none"> • Okanagan College: ongoing • UBC Okanagan: ongoing

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
		<p>UBC:</p> <ul style="list-style-type: none"> • Informal process based primarily on recommendations from the faculty Technology Studies Committee. 	<p>to reflect this.</p> <p>Process and frequency</p> <ul style="list-style-type: none"> • Content courses are driven by the Department of Education Curriculum, which is Evergreen. • Professional courses like the technical methods courses are reviewed yearly by staff, students and employers. Change is made by instructors to reflect this. • College program renewal is based on feedback from an outside group of colleagues from other universities, upper level administration, industry, staff and students. • This happens about every five years and is currently in process. 	

	RRC	ACADIA	BEMIDJI	MEMORIAL	OKANAGAN/UBC
Curriculum Renewal	Department of RRC. <ul style="list-style-type: none"> • Every 5 years 				
Partnerships	<ul style="list-style-type: none"> • Formal partnership with University of Winnipeg. • Strong Relationship with High Schools. 	<ul style="list-style-type: none"> • A strong working relationship (liaison committee) with the Nova Scotia Agriculture College that is a good source of undergrads to this program via their Bachelor of Technology – Applied Science degree. • A strong relationship with the local high school that leases facilities for some of the technical courses. The program Coordinator was part of the design process of the school's facilities. 	<ul style="list-style-type: none"> • Participating in a private donor -10 million dollar Centre of Excellence grant for "Project Lead the Way" that is essentially a practical application of STEM Education theories. 	<ul style="list-style-type: none"> • Close working relationship with schools (practicum and sessional teachers) • Very close working relationship with the Department of Education. 	<ul style="list-style-type: none"> • Okanagan College: Formal partnership with UBCO. • UBCO: Formal partnership with Okanagan College, strong working relationships with BCIT, local school districts and local teacher's associations.
Other Location of the Technical courses (on campus, in other faculties, in off campus facilities)	<ul style="list-style-type: none"> • All First major courses are all at Red River College. • All Second major courses are at University of Manitoba. 	<ul style="list-style-type: none"> • A local technology-rich high school that program personel helped design. 	<ul style="list-style-type: none"> • On campus 	<ul style="list-style-type: none"> • Usually on campus, but some local school and college facilities are leased. 	<ul style="list-style-type: none"> • Tech component is handled by Okanagan College.
Comments		<ul style="list-style-type: none"> • Dr. MacKinnon has designed the current Technology Education Teacher Program at Acadia 			

OLD DOMINON	UofA	BCIT / UofBC	UofS	UofNB
<ul style="list-style-type: none"> Relationship with regional schools regarding student teaching Advisory committee from business, industry & school divisions. Meets annually. 	<ul style="list-style-type: none"> Establishing partnerships with other post secondary is currently in process. A strong relationship is in place with schools regarding student practicum and content development. 	<p>BCIT:</p> <ul style="list-style-type: none"> A strong relationship exists with the schools. <p>A partnership exists with UBC. It works well with each group having their defined programs. (The BCIT facility actually used to be a satellite of UBC until about 20 years ago). Students keep in contact after leaving for the UBC portion of the program and actually return often to utilize resources during their UBC teaching practicum.</p> <p>UBC:</p> <p>BCIT</p>	<ul style="list-style-type: none"> Partnerships have been various from time to time. There are none in place currently other than short term agreements with some High Schools regarding facilities and a strong supportive relationship with the Saskatchewan Association of Practical and Applied Arts Teachers 	
<ul style="list-style-type: none"> All on campus 	<ul style="list-style-type: none"> Currently on campus in a proprietary CTS multi-activity lab and some off campus in the Edmonton area. Three weeks are also spent in the Public System in CTS facilities (over and above regular practicum time). 	<ul style="list-style-type: none"> British Columbia Institute of Technology 	<ul style="list-style-type: none"> Most courses are taught on campus in College of Engineering facilities. Occasionally off campus facilities (in local high schools) are retained for some classes. 	

Appendix B – Industry Occupational Analysis (DACUM) Chart

DACUM Skill Rating Scale

- 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 or supervision.
- 4 - Can perform this skill competently, with initiative / adaptability to unique situations, and can educate others to perform the skill.

DEMONSTRATE COMMUNICATION SKILLS
A

Demonstrate active listening skills A1	Interpret technical materials A2	Adapt language to audience A3	Create an environment for open dialogue A4	Develop teacher-parent communication strategies A5	Demonstrate questioning skills A6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Initiate communication A7	Interpret non-verbal communication A8	Use a variety of communication technologies (old-new-emerging) A9	Demonstrate public speaking skills A10	Demonstrate classroom presentation skills A11	Develop visual teaching aids A12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Create hand-outs A13	Adapt presentation format to audience A14	Demonstrate oral and written literacy A15	Synthesize information A16	Practice constructive criticism A17	Demonstrate cultural sensitivity for a variety of cultures A18
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

DIFFERENTIATE INSTRUCTION
B

Assess student learning styles / abilities B1	Adapt activities to student learning styles /abilities B2	Create authentic hands-on experiences B3	Create an inclusive environment B4	Adapt teaching strategies to meet learner needs / wants B5	Evaluate teaching effectiveness (during delivery) B6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Assess student engagement B7	Create opportunities for students to be successful B8	Use a variety of learning resources (human, assistive technology, etc.) B9	Identify assistive technologies B10	Integrate para-professionals into classroom activities B11	Determine role of para-professionals in the Industrial Arts Classroom B12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

**DEMONSTRATE
PROFESSIONALISM
C**

Demonstrate empathy C1	Act as a resource for others C2	Follow Professional Code of Conduct C3	Demonstrate a commitment to life-long learning C4	Value / respect confidentiality C5	Demonstrate commitment to profession C6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Act as a role model C7	Develop professional networks C8	Build relationships C9	Work as a member of a team C10	Value professional associations C11	Demonstrate time management skills C12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Demonstrate ethical behaviour C13	Follow laws, regulations, and divisional policies C14	Identify the need to consult with other professionals C15	Demonstrate organizational skills C16	Adapt to change C17	Value professional development C18
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Formulate personal goals C19	Evaluate personal goals C20	Practice wellness C21			
1 2 3 4	1 2 3 4	1 2 3 4			

**DESIGN
INSTRUCTION
D**

Apply learning theories D1	Development safe work practices D2	Design activities D3	Organize classroom activities D4	Adapt course materials D5	Adapt activities to grade level D6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Revise content to maintain currency D7	Evaluate emerging technology D8	Apply curriculum guidelines D9	Develop short- and long-term instructional plans D10	Demonstrate creativity D11	Write learning outcomes D12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

**DEMONSTRATE
CLASSROOM
MANAGEMENT
SKILLS
E**

Create a safe learning environment E1 1 2 3 4	Demonstrate motivational skills E2 1 2 3 4	Initiate student engagement E3 1 2 3 4	Develop classroom routines and procedures E4 1 2 3 4	Create an environment conducive to learning E5 1 2 3 4	Develop students' social behaviours E6 1 2 3 4
Identify expectations E7 1 2 3 4	Apply a variety of classroom management strategies E8 1 2 3 4	Develop student teambuilding skills E9 1 2 3 4	Demonstrate consistency E10 1 2 3 4	Demonstrate situational flexibility (e.g. recognition of students emotional / social state-of-being) E11 1 2 3 4	

**ASSESS/EVALUATE
STUDENT
PERFORMANCE
F**

Apply assessments to outcomes F1 1 2 3 4	Design assessment tools F2 1 2 3 4	Apply formative and summative evaluation strategies F3 1 2 3 4	Develop student self-assessment tools F4 1 2 3 4	Write reports on student performance (for students, parents, administration, etc.) F5 1 2 3 4	Describe student performance F6 1 2 3 4
Practice ongoing and continuous feedback strategies F7 1 2 3 4	Differentiate between student learning and student personal / social development F8 1 2 3 4				

TEACH INDUSTRIAL ARTS / TECHNOLOGY G
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Demonstrate problem solving skills G1	Develop students' listening skills G2	Demonstrate trouble-shooting skills G3	Use related tools and machinery safely G4	Use trouble-shooting and testing equipment safely G5	Identify components and materials C6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Use technical terminology G7	Manipulate tools and equipment G8	Illustrate ideas graphically G9	Analyze mechanical systems G10	Analyze processes G11	Interpret technical instructions G12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Demonstrate dexterity / fine motor skills G13	Demonstrate processes G14	Analyze impact of technology on society / environment G15	Construct models / prototypes / projects G16	Measure data G17	Interpret data G18
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Report data G19	Manipulate data G20	Design products G21	Practice safe work habits G22	Demonstrate resourcefulness G23	Design procedures G24
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Practice organizational skills G25	Practice hands-on / minds-on activities (transfer of knowledge and skills) G26				
1 2 3 4	1 2 3 4				

MANAGE FACILITIES
H

Fix equipment H1	Calibrate equipment H2	Practice equipment maintenance H3	Create a budget H4	Follow a budget H5	Write budget proposals H6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Organize lab / facility / shop H7	Follow divisional procedures (e.g. ordering, purchasing) H8	Create a safe physical environment H9	Prepare emergency plans H10	Apply workplace laws and regulations H11	Practice inventory management H12
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Demonstrate basic accounting skills H13					
1 2 3 4					

USE ICT
I

Use spreadsheets I1	Use word processing software I2	Use grade book and reporting technologies I3	Adapt to grade book and reporting technologies I4	Demonstrate computer literacy I5	Adapt to a variety of software / hardware I6
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Use email I7	Use online resources and databases I8	Use presentation software I9			
1 2 3 4	1 2 3 4	1 2 3 4			

**Appendix C – Emerging/Sustaining/Retiring Content Trends
Workshop**

**INDUSTRIAL ARTS/TECHNOLOGY TEACHER EDUCATION
EMERGING/SUSTAINING/RETIRING CONTENT TRENDS WORKSHOPS
June 11, 12 & 13, 2008**

Purpose:

The DACUM process for the Industrial Arts/Technology Teacher Education program was able to provide a description of skills required for entry-level I.A. /Tech. Ed. teachers and general emerging/retiring education trends, however due to time restraints, the process was unable to detail emerging/sustaining/retiring content trends in the specific teaching areas under the umbrella of I.A. / Tech. Ed. To develop this important guiding component, the department chair initiated a series of one-half day specific area workshops with current teachers in the field to brain storm the topic.

Facilitator:

Dennis Wasyluniuk

Participants:

Wednesday, June 11, 1:00

Woodworking and Technology Education:
Ken Blackner West Kildonan Collegiate
Mark Blieske Lockport School
Ed Pang Sisler High School
Arnold Pereles Arthur Leach
Brian Bean RRC Faculty
Andy Kozlowsky RRC Faculty
Gordon Price RRC Faculty
Bernard Taronno RRC Faculty

Friday, June 13, 9:00

Graphics and Technology Education:
Ron Budowski Ecole Leila North
Crystal Lachance Sisler High School
Debbie Merriman Glenlawn Collegiate
Ron Turek Maples Collegiate
Brian Bean RRC Faculty
Andy Kozlowsky RRC Faculty
Gordon Price RRC Faculty
Kurt Proctor RRC Faculty

Thursday, June 12, 9:00

Metalworking and Technology Education:
Rick Botchar Highbury School
James Gibson Steinbach Jr. High
Brendan McManus Sanford Collegiate
Arnold Pereles Arthur Leach
Dave Woitowicz Kildonan East
Brian Bean RRC Faculty
Andy Kozlowsky RRC Faculty
Gordon Price RRC Faculty
Kurt Proctor RRC Faculty

Friday, June 13, 1:00

Power & Energy and Technology Education:
Dave Ingram St. James Collegiate
Tony Michaluk Maples Collegiate
Ryan Sabourin Nelson McIntyre Coll.
Brian Bean RRC Faculty
Andy Kozlowsky RRC Faculty
Gordon Price RRC Faculty
Kurt Proctor RRC Faculty
Bernard Taronno RRC Faculty
Written Submission by:
Robert Cordingley Louis Reil S.D.
Doug Cameron Louis Riel S.D.

In each content area workshop the participants were lead through a “brain storming discussion” in which they were asked to:

1. Identify the current emerging, sustaining and retiring trends that were important for the Industrial Arts/Technology teacher Education program to take into account in developing curriculum for I.A. /Tech. Ed. Teacher Education students. These could take the form of processes, equipment, technology, material or any other type of indicator.
2. Identify programming needs in the content area as it relates to Technology Education and
3. Comment on the overall I.A. /Tech. Teacher Ed. Program

Results:

Woodworking Workshop (listed in random order)

Emerging Trends:

- CAD – router, lathe
- Rare earth magnet clamping
- Awareness of new technology
- Facility environment (in relationship to Safety)
- Design Applications, from CAD to project
- Domino technology joinery
- Helical (planning) blades
- 2D CNC machines
- Saw Stop safety devices
- Thickness Sanders
- Downdraft Sanding Tables
- Dyna-braid dustless air sanders
- Cyclone dust collectors
- Articulating dust collector arms
- Awareness of new adhesives
- Awareness of new fasteners
- Four-jaw one-way chucks
- STEM (Science Technology Engineering Math – integration)

Sustaining Trends:

- Use of a variety of router bits
- Hand tool safety
- Machine safety
- Personal safety
- Master joinery
- Wood ordering
- Woodturning
- Wood identification
- Developing a “bag of tricks”
- General maintenance
- Basic general machine repair & service
- Exploration of various finishing procedures
- Use of measuring tools
- Process orientation
- Design

Retiring Trends

- Shaper
- Select group of hand tools

Technology Education (as it relates to Woods):

- Integration of Industrial Arts subjects
- Problem solving

Metalworking Workshop (listed in approximate priority)

Emerging Trends:

- CNC - plasma, lathe, machining
- Laser cutting (WPG – North American capital)
- Lost wax casting
- Glues, adhesives – body panels
- Solid modeling and CAM software
- Powder coating

Sustaining Trends:

- Safety
- Layout
- Measurement
- Layout tools – steel rule, square, etc
- Design
- Cutting tools – hacksaw, aviation snips, etc
- Forming machines – break, bar folder, rolling machines
- Tap & Die sets
- Hand forming tools
- Soldering
- Plasma cutting
- Welding – spot, arc, MIG, gas
- Sheet metal technology – cutting, forming, assembly
- Metal lathe
- Basic machine tool operation math (feed + speed)(where to get info)
- Metal types, alloys
- Basic Tool/machine maintenance & repair – how to, what to, what to delegate
- Tool sharpening
- Problem solving
- CAD
- Blueprint reading
- Finishing metal – sand blasting, polishing
- Metal hardening (heat treating)
- Pipe benders (tube bending)

Retiring Trends

- Sand casting

Technology Education (as it relates to Metals):

- Practical application of academics
- Problem solving
- Integration of skills (metalworking/woods)
- Integrating 3D modeling with CNC machines
- Elements of design

Graphics Workshop (listed in approximate priority)

Emerging Trends:

- 3D
- 3D printers
- PRO ENGINEER
- CATIA
- SOLID EDGE
- ENVISIONEER
- Animation
- CNC
- Digital video editing
- MOVIE MAKER
- I- MOVIE
- FINAL CUT
- Large format inkjet printing – signage, textile
- Windows/Mac platforms

Sustaining Trends:

- Computer design
- INDESIGN
- PHOTOSHOP
- COREL DRAW
- PAGEMAKER
- ILLUSTRATOR
- Digital photo editing
- SKETCH UP
- AUTO CAD
- 3D HOME
- Airbrush
- Screen printing
- Vinyl cutter
- Continuous tone photography
- Manual drafting
- Dry mounting & mat cutting
- Binding/finishing documents

Retiring Trends

- Offset printing
- PUBLISHER
- Sign press

Technology Education (as it relates to Graphics):

- Problem solving
- Design
- Brain storming
- Hands-on exploration
- Models
- Facilitating resource hub
- Integration subject materials (math, science)
- Boat float project
- “Car” project
- “Bridges” project
- “Rockets” project
- “Hot air balloons” project

Power & Energy Workshop (listed in approximate priority)

Emerging Trends:

- Working environment
- Alternative fuel technology
- Diesel technology
- ZEU (zero emission vehicles)
- Soldering & metal joinery – lead free material
- Auto safety devices – airbags, TPMS (tire pressure monitoring system)
- Simulations
- NANO Technology
- Wireless technology
- High voltage systems (hybrid cars)
- Surface mount technology (integrated circuit boards)

Sustaining Trends:

- Safety – electrical, tool, shop
- Passive & active components
- Tools identification and use
- Basic electron theory
- Electronic circuit & PCB design software
- Magnetism & related devices – relay, solenoids, electro magnetism, motors, generators, transformers
- AC & DC fundamentals
- Power supplies & rectifiers
- Electrical tools & test equipment
- Meters & scopes
- Electrical math – Ohm's Law, Watt's Law, Kirchoff's Law
- PCB construction – ferric chloride, photo exposure, acid bath
- Micro controllers
- Circuit troubleshooting
- Residential wiring
- CNC
- Robotics/servo controlled devices
- 2 stroke, 4 stroke
- Small engines
- Carburetion re: small engines
- Fuel Injection, turbo charging
- Technical skills related to Power Mechanics
- Courses in Automotive
- Air & fluid power
- Automotive mechanics
- Electrical diagnostics
- Frequency/bandwidth

Retiring Trends

- PC repair (hardware)
- Appliance & consumer electronics repair
- Carburetion re: autos

Technology Education (as it relates to Power & Energy):

- Simple machines
- Basic mechanisms
- Modular based labs/stations
- Problem solving skills
- Composites
- 3D modeling
- Alternative power/energy sources
- Environment

Comments Regarding the Program in General (listed in random order - from all four workshops and written submission):

- (Student teachers need to know) how to teach
- How to deal with Teacher Assistants
- How to prepare
- Awareness of prepping for school opening – August/September
- How to motivate
- Dress code & conduct
- “Bag of tricks”
- Opportunity to return to the college to “keep pace” in content areas
- Concern over amount of Automotive training
- Advanced courses related to Industrial Arts
- Teachers should be able to discuss with students and direct them to resources regarding career paths for careers related to Industrial Arts disciplines.
- The main focus should be on developing in teachers, skills in the manipulation of tools, materials and processes in the disciplines of Industrial Arts.
- An important priority should be to develop in teachers, a thorough understanding of Workplace Health and Safety.
- Teachers should be able to develop, in their students, “essential” or “employability” skills.
- Teachers should understand the role and impact of technology in our society.
- Content in the disciplines of Industrial Arts should be chosen on the basis of its’ ability to support student design and problem solving.
- Content should be selected, for teacher education, and subsequently by teachers in their classrooms with an understanding that students are bringing different skills to the classroom than they did in 1987 when the current curriculum was written.
- Would like student teachers to see the first week or two of classes
- Suggested a couple days where teachers observe what our students are doing
- Ensure there is a mastery of safety
- Would like RRC faculty to see what teacher do in their labs
- Noted that process is more important than projects
- Time management/planning
- More quick lessons in front of class that aren’t planned
- Would like student teachers at the beginning and end of term
- How to document safety training
- How to do regular inspections
- Need to be able to budget
- Need to know how to order materials and supplies
- Students need to take with them project ideas for each grade level
- More machine repair and regular maintenance knowledge

- Dennis Wasylyniuk

Appendix D – Graduate Skills and Abilities Chart

DACUM Skill Rating Scale:

- 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 or supervision.
- 4 Can perform this skill competently without assistance, with more than acceptable quality, and with initiative/adaptability to unique situations.

-  Indicates skill rating.
-  DACUM Committee Skill deleted.
-  Skill or Competency added by Faculty or DACUM wording changed.

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

Industry DACUM	Faculty Expectations	College-Wide Learning Outcomes (CWLOs)
DEMONSTRATE COMMUNICATION SKILLS A		
Demonstrate active listening skills A1		A3 • listen and ask questions to understand and appreciate the points of view of others
1 2 3 4	1 2 3 4	
Interpret technical materials A2		A1 • read and understand information presented in a variety of forms (e.g. words, graphs, charts, diagrams)
1 2 3 4	1 2 3 4	
Adapt language to audience A3		
1 2 3 4	1 2 3 4	
Create an environment for open dialogue A4		J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Develop teacher-parent communication strategies A5		J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Demonstrate questioning skills A6		A3 • listen and ask questions to understand and appreciate the points of view of others
1 2 3 4	1 2 3 4	

Initiate communication A7		J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Interpret non-verbal communication A8		
1 2 3 4	1 2 3 4	
Use a variety of communication technologies (old-new-emerging) A9		J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Demonstrate public speaking skills A10		A4 • share information using a range of information and communications technologies (e.g. voice, e-mail, computers) J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Demonstrate classroom presentation skills A11		A2 • write and speak so others pay attention and understand
1 2 3 4	1 2 3 4	
Develop visual teaching aids A12		
1 2 3 4	1 2 3 4	
Create hand-outs A13		
1 2 3 4	1 2 3 4	
Adapt presentation format to audience A14		J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Demonstrate oral and written literacy A15		
1 2 3 4	1 2 3 4	
Synthesize information A16	Apply information	
1 2 3 4	1 2 3 4	

Practice constructive criticism A17		J 1 to J9 WORK WITH OTHERS E2 • deal with people, problems and situations with honesty, integrity and personal ethics
1 2 3 4	1 2 3 4	
Demonstrate cultural sensitivity for a variety of cultures A18	Demonstrate cultural sensitivity	J 1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	

DIFFERENTIATE INSTRUCTION B		
Assess student learning styles / abilities B1		D1 • assess situations and identify problems D3 • recognize the human, interpersonal, technical, scientific and mathematical dimensions of a problem D9 • check to see if a solution works, and act on opportunities for improvement
1 2 3 4	1 2 3 4	
Adapt activities to student learning styles /abilities B2		D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Create authentic hands- on experiences B3	Provide hands on experiences	D3 • recognize the human, interpersonal, technical, scientific and mathematical dimensions of a problem D5 • be creative and innovative in exploring possible solutions D6 • readily use science, technology and mathematics as ways to think, gain and share k
1 2 3 4	1 2 3 4	
Create an inclusive environment B4		D1 • assess situations and identify problems D7 • evaluate solutions to make recommendations or decisions D8 • implement solutions J1 to J9 WORK WITH OTHERS
1 2 3 4	1 2 3 4	
Adapt teaching strategies to meet learner needs / wants B5		D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Evaluate teaching effectiveness (during delivery) B6		D2 • seek different points of view and evaluate them based on facts D4 • identify the root cause of a problem D7 • evaluate solutions to make recommendations or decisions D9 • check to see if a solution works, and act on opportunities for improvement
1 2 3 4	1 2 3 4	
Assess student engagement B7		D7 • evaluate solutions to make recommendations or decisions D9 • check to see if a solution works, and act on opportunities for improvement
1 2 3 4	1 2 3 4	

Create opportunities for students to be successful B8		D3 • recognize the human, interpersonal, technical, scientific and mathematical dimensions of a problem D5 • be creative and innovative in exploring possible solutions D8 • implement solutions
1 2 3 4	1 2 3 4	
Use a variety of learning resources (human, assistive technology, etc.) B9		D2 • seek different points of view and evaluate them based on facts D8 • implement solutions
1 2 3 4	1 2 3 4	
Identify assistive technologies B10		D9 • check to see if a solution works, and act on opportunities for improvement
1 2 3 4	1 2 3 4	
Integrate para-professionals into classroom activities B11		D1 • assess situations and identify problems D2 • seek different points of view and evaluate them based on facts D4 • identify the root cause of a problem D8 • implement solutions
1 2 3 4	1 2 3 4	
Determine role of para-professionals in the Industrial Arts Classroom B12		D2 • seek different points of view and evaluate them based on facts
1 2 3 4	1 2 3 4	

DEMONSTRATE PROFESSIONALISM C		
Demonstrate empathy C1		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS
1 2 3 4	1 2 3 4	
Act as a resource for others C2		E2 • deal with people, problems and situations with honesty, integrity and personal ethics E5 • show interest, initiative and effort
1 2 3 4	1 2 3 4	
Follow Professional Code of Conduct C3		E2 • deal with people, problems and situations with honesty, integrity and personal ethics E3 • recognize your own and other people's good efforts E5 • show interest, initiative and effort F4 • be accountable for your actions and the actions of your gro
1 2 3 4	1 2 3 4	
Demonstrate a commitment to life-long learning C4		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS H1 to H5 LEARN CONTINUOUSLY
1 2 3 4	1 2 3 4	

Value / respect confidentiality		
C5		
1 2 3 4	1 2 3 4	
Demonstrate commitment to profession		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS F1 to F5 BE RESPONSIBLE H1 to H5 LEARN CONTINUOUSLY
C6		
1 2 3 4	1 2 3 4	
Act as a role model		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS F1 to F5 BE RESPONSIBLE
C7		
1 2 3 4	1 2 3 4	
Develop professional networks	Develop professional/peer networks	E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS
C8		
1 2 3 4	1 2 3 4	
Build relationships		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS F5 • be socially responsible and contribute to your community
C9		
1 2 3 4	1 2 3 4	
Work as a member of a team		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS F4 • be accountable for your actions and the actions of your group F5 • be socially responsible and contribute to your community J 1 to J9 WORK WITH OTHERS
C10		
1 2 3 4	1 2 3 4	
Value professional associations		F5 • be socially responsible and contribute to your community
C11		
1 2 3 4	1 2 3 4	
Demonstrate time management skills		F1 • Set goals and priorities balancing work and personal life F2 • plan and manage time, money and other resources to achieve goals
C12		
1 2 3 4	1 2 3 4	
Demonstrate ethical behaviour		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS F1 to F5 BE RESPONSIBLE
C13		
1 2 3 4	1 2 3 4	
Follow laws, regulations, and divisional policies		
C14		
1 2 3 4	1 2 3 4	
Identify the need to consult with other professionals		J 1 to J9 WORK WITH OTHERS
C15		
1 2 3 4	1 2 3 4	

Demonstrate organizational skills C16		F1 • Set goals and priorities balancing work and personal life F2 • plan and manage time, money and other resources to achieve goals
1 2 3 4	1 2 3 4	
Adapt to change C17		H1 to H5 LEARN CONTINUOUSLY
1 2 3 4	1 2 3 4	
Value professional development C18		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS H1 to H5 LEARN CONTINUOUSLY
1 2 3 4	1 2 3 4	
Formulate personal goals C19		E1 to E5 DEMONSTRATE POSITIVE ATTITUDES & BEHAVIOURS H1 to H5 LEARN CONTINUOUSLY
1 2 3 4	1 2 3 4	
Evaluate personal goals C20		
1 2 3 4	1 2 3 4	
Practice wellness C21		E4 • take care of your personal health
1 2 3 4	1 2 3 4	

DESIGN INSTRUCTION D		
Apply learning theories D1		
1 2 3 4	1 2 3 4	
Develop safe work practices D2		I1 • be aware of personal and group health and safety practices and procedures, and act in accordance with these
1 2 3 4	1 2 3 4	
Design activities D3		K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4	
Organize classroom activities D4		K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4	

Adapt course materials D5			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Adapt activities to grade level D6			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Revise content to maintain currency D7			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Evaluate emerging technology D8			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Apply curriculum guidelines D9			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Develop short- and long-term instructional plans D10			K1 to K6 PARTICIPATE IN PROJECTS & TASKS
1 2 3 4	1 2 3 4		
Demonstrate creativity D11			
1 2 3 4	1 2 3 4		
Write learning outcomes D12			
1 2 3 4	1 2 3 4		

DEMONSTRATE CLASSROOM MANAGEMENT SKILLS E			
Create a safe learning environment E1			I1 • be aware of personal and group health and safety practices and procedures, and act in accordance with these
1 2 3 4	1 2 3 4		
Demonstrate motivational skills E2			G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4		

Initiate student engagement E3		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	
Develop classroom routines and procedures E4		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	
Create an environment conducive to learning E5		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	
Develop students' social behaviours E6		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	
Identify expectations E7		
1 2 3 4	1 2 3 4	
Apply a variety of classroom management strategies E8		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	
Develop student teambuilding skills E9		
1 2 3 4	1 2 3 4	
Demonstrate consistency E10		
1 2 3 4	1 2 3 4	
Demonstrate situational flexibility (e.g. recognition of students emotional / social state-of-being) E11		G1 to G6 BE ADAPTABLE
1 2 3 4	1 2 3 4	

ASSESS/EVALUATE STUDENT PERFORMANCE F		
Apply assessments to outcomes F1		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Design assessment tools F2		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Apply formative and summative evaluation strategies F3		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Develop student self-assessment tools F4		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Write reports on student performance (for students, parents, administration, etc.) F5		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Describe student performance F6		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Practice ongoing and continuous feedback strategies F7		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Differentiate between student learning and student personal / social development F8	Delete	
1 2 3 4	1 2 3 4	

TEACH INDUSTRIAL ARTS / TECHNOLOGY G		
Demonstrate problem solving skills G1		D1 to D9 THINK AND SOLVE PROBLEMS

Develop students' listening skills G2		
1 2 3 4	1 2 3 4	
Demonstrate trouble-shooting skills G3		D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Use related tools and machinery safely G4		I1 WORK SAFELY
1 2 3 4	1 2 3 4	
Use trouble-shooting and testing equipment safely G5		I1 WORK SAFELY D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Identify components and materials C6		
1 2 3 4	1 2 3 4	
Use technical terminology G7		
1 2 3 4	1 2 3 4	
Manipulate tools and equipment G8		
1 2 3 4	1 2 3 4	
Illustrate ideas graphically G9		
1 2 3 4	1 2 3 4	
Analyze mechanical systems G10	Delete	
1 2 3 4	1 2 3 4	
Analyze processes G11	Analyze processes/systems	C1 to C3 USE NUMBERS D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	

Interpret technical instructions G12		B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Demonstrate dexterity / fine motor skills G13		
1 2 3 4	1 2 3 4	
Demonstrate processes G14	Demonstrate processes/systems G14	A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas
1 2 3 4	1 2 3 4	
Analyze impact of technology on society / environment G15		A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Construct models / prototypes / projects G16		C1 to C3 USE NUMBERS D1 to D9 THINK AND SOLVE PROBLEMS
1 2 3 4	1 2 3 4	
Measure data G17		A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas C1 • decide what needs to be measured or calculated
1 2 3 4	1 2 3 4	
Interpret data G18		A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas C3 • make estimates and verify calculations
1 2 3 4	1 2 3 4	
Report data G19		A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas C2 • observe and record data using appropriate methods, tools and technology
1 2 3 4	1 2 3 4	
Manipulate data G20		A5 • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas B1 to B2 MANAGE INFORMATION
1 2 3 4	1 2 3 4	
Design products G21		
1 2 3 4	1 2 3 4	
Practice safe work habits G22		I1 WORK SAFELY
1 2 3 4	1 2 3 4	

Demonstrate resourcefulness G23		
1 2 3 4	1 2 3 4	
Design procedures G24		
1 2 3 4	1 2 3 4	
Practice organizational skills G25		
1 2 3 4	1 2 3 4	
Practice hands-on / minds-on activities (transfer of knowledge and skills) G26		B2 • access, analyze and apply knowledge and skills from various disciplines (e.g. the arts, languages, science, technology, mathematics, social sciences, and the humanities)
1 2 3 4	1 2 3 4	

MANAGE FACILITIES H		
Fix equipment H1		
1 2 3 4	1 2 3 4	
Calibrate equipment H2		
1 2 3 4	1 2 3 4	
Practice equipment maintenance H3	Apply equipment maintenance practices H3	
1 2 3 4	1 2 3 4	
Create a budget H4		
1 2 3 4	1 2 3 4	
Follow a budget H5		
1 2 3 4	1 2 3 4	

Write budget proposals H6		
1 2 3 4	1 2 3 4	
Organize lab / facility / shop H7		
1 2 3 4	1 2 3 4	
Follow divisional procedures (e.g. ordering, purchasing) H8		
1 2 3 4	1 2 3 4	
Create a safe physical environment H9		I1 WORK SAFELY
1 2 3 4	1 2 3 4	
Prepare emergency plans H10		
1 2 3 4	1 2 3 4	
Apply workplace laws and regulations H11		I1 WORK SAFELY
1 2 3 4	1 2 3 4	
Practice inventory management H12		C1 to C3 USE NUMBERS
1 2 3 4	1 2 3 4	
Demonstrate basic accounting skills H13	Demonstrate basic bookkeeping skills H13	
1 2 3 4	1 2 3 4	
USE ICT I		
Use spreadsheets I1		C1 to C3 USE NUMBERS
1 2 3 4	1 2 3 4	
Use word processing software I2		
1 2 3 4	1 2 3 4	

Use grade book and reporting technologies I3		
1 2 3 4	1 2 3 4	
Adapt to grade book and reporting technologies I4	Delete	
1 2 3 4	1 2 3 4	
Demonstrate computer literacy I5		
1 2 3 4	1 2 3 4	
Adapt to a variety of software / hardware I6		
1 2 3 4	1 2 3 4	
Use email I7		
1 2 3 4	1 2 3 4	
Use online resources and databases I8		
1 2 3 4	1 2 3 4	
Use presentation software I9		
1 2 3 4	1 2 3 4	

Appendix E – Graduate Profile

RRC INDUSTRIAL ARTS/TECHNOLOGY TEACHER EDUCATION PROGRAM

Graduate Profile

Upon successful completion of the program, the graduate should:

- A. Communicate effectively with students, parents, and colleagues in an education environment.
- B. Teach safety practices and procedures to students while modeling safe practices in classrooms and labs.
- C. Create inclusive learning environments that recognize and respect student's diversity, individual differences, perspectives and learning styles.
- D. Lead or support when appropriate, and contribute to motivating others.
- E. Demonstrate professionalism to students, peers, parents and the community following a professional code of conduct, school/division policies, and applicable laws and regulations.
- F. Design instruction applying curriculum guidelines, writing learning outcomes and using indicators of success including broad assessment, varied instructional techniques, and personalized instruction.
- G. Manage classrooms and labs in schools creating a safe and engaging learning environment.
- H. Assess/evaluate student performance applying summative and formative evaluation strategies, designing and applying assessment/evaluation tools, and reporting on student progress/achievement.
- I. Teach Industrial Arts/Technology using related tools and equipment safely, while leading students through design, development, application, and reporting phases of Industrial Arts labs/projects.
- J. Manage classroom and lab facilities ensuring equipment and facilities are safe, well maintained, and adequately stocked following school/division procedures regarding: maintenance, ordering, and purchasing.
- K. Use information and computer technologies as tools for instruction and administrative purposes.
- L. Learn continuously, keeping up-to-date with trends in education and industry .

Appendix F – Program Renewal Vision and Goals

The program's **vision** is to be recognized as a national leader in Industrial Arts/Technology Teacher Education.

The following **goals** were identified to realize this vision:

1. To provide a synergistic learning experience where students can recognize linkages between courses, reflect on, apply, and be accountable for their learning through activities performed during the program.
2. To practice continuous improvement using quality assurance processes where faculty welcomes change while implementing research-based curriculum adaptations and revisions as a collegial group.
3. To emphasize and maintain a high-standard of hands-on instruction while ensuring that Industrial Arts/Technology Teacher Education evolves in step with changing technology in schools and in the community.
4. To provide leadership in Industrial Arts/Technology Teacher Education at provincial and national levels; leveraging the reputation and uniqueness of the RRC program.
5. To provide advanced courses for existing teachers, and to increase marketing of the program both within Manitoba and throughout Canada.
6. To provide instruction in the safe operation and maintenance of tools and equipment.
7. To model the appropriate physical environment for effective teaching and learning in Industrial Arts/Technology Education.
8. To encourage wellness of both faculty and students by providing opportunities for professional and personal development as well as encouraging a positive work-life balance.

Appendix G– Program Renewal Plan

Renewal Plan

1. Adapt a course in the fourth year of the program what will include topics learned in a number of course areas. Transference of learning will be a key topic in the course.

Implementation: Fall 2008 – Winter 2010

2. A curriculum committee will be established for the Industrial Arts/Technology Teacher Education program.

Implementation: Fall 2008 and ongoing

3. Ongoing research will continue to take place on emerging technology.

Implementation: Winter 2009 and ongoing

4. Faculty will participate in professional development focusing on CAD/CAM software and implementation of the software tools.

Implementation: Summer 2008 and ongoing

5. Faculty will offer professional development for advanced topics in Industrial Arts/Technology education.

Implementation: Spring 2009 and ongoing

6. A 30 credit hour program will be developed and presented to the Teacher Education and Certification Committee for salary recognition purposes.

Implementation: Winter 2009

7. A course will be redeveloped to include additional topics on the safe operation and maintenance of equipment and tools.

Implementation: Fall 2008 and ongoing development

8. In order to meet the demands of industry, a request for a larger space with better air quality will be forwarded to management.

Implementation: Summer 2008

