Subject Table Handbook Technology Education

Student Records System and Professional School Personnel System

September 2019 to August 2020

Manitoba

Subject Table Handbook
Technology Education

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Healthy Child Manitoba Office and K-12 Education Division
Winnipeg, Manitoba, Canada

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Available in alternate formats upon request.

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Introduction

Purpose

The purpose of the *Subject Table Handbook: Technology Education* is to support schools in the 2019/2020 school year by

- providing basic information to schools for entering student records into the Student Records system (SRS)
- providing subject computer codes for courses developed by Manitoba Education and Training and for those approved or registered by the department

A new edition of the *Subject Table Handbook: Technology Education* is provided for each school year. It reflects changes to course codes, credits, et cetera, that apply for the upcoming school year. Schools are responsible for ensuring that they are using the appropriate edition of the *Handbook* when reporting student high school (senior years) marks to Education Administration Services. **Note that schools must use the September 2018–August 2019 *Subject Table Handbook* for reporting 2018/2019 student marks in the summer and fall of 2019.**

This edition of the *Subject Table Handbook: Technology Education* is in effect from September 1, 2019, to August 31, 2020, and is available online at www.edu.gov.mb.ca/k12/docs/policy/sthte/index.html. Placing the *Handbook* online provides information about course codes, levels, and credits to accommodate schools in setting up their registrations and course offerings for the next school year. Some changes may occur over the 2019/2020 school year as new curricula are released. The online content will be updated several times during the year, but schools should exercise some caution when setting up their course codes.

Senior Years Credit System

The Senior Years (Grade 9 to Grade 12) credit system provides flexibility to enable students to pursue Senior Years courses best suited to their individual requirements and aspirations. Students may earn *one credit* by undertaking and successfully completing a course of study designed for a minimum of 110 hours of instruction. *Half credits* (courses designed for a minimum of 55 hours of instruction) may be earned in like manner. There are two categories of credits: compulsory and optional.

Graduation Requirements for the Senior Years Technology Education Program

To receive a Senior Years Technology Education diploma, a student must complete eight departmentally developed courses from an approved technical-vocational or applied commerce education cluster, together with 17 compulsory credits and five optional credits.

Graduation Requirements for the Senior Years Technology Education Program	
Diploma Requirements	Credits Required for Graduation
Compulsory Credits	17
English language arts (1 credit per grade)	4
mathematics (1 credit per grade)	4
physical education/health education (1 credit per grade)	4
social studies (1 credit in each of Grades 9, 10, and 11)	3
science (1 credit in each of Grades 9 and 10)	2
Approved Cluster of Contemporary Technology Education Credits	8 to 12
Optional Credits	1 to 5
Totals	**30**

Please see https://www.edu.gov.mb.ca/k12/policy/grad_require.html for more information.

Senior Years Course Identification

Course Numbering

The present course numbering system comprises a three-character, alpha-numeric code. The first and second characters are numerals, while the third is a letter.

- **First Character**
  - 1 — for courses developed for Grade 9
  - 2 — for courses developed for Grade 10
  - 3 — for courses developed for Grade 11
  - 4 — for courses developed for Grade 12
- **Second Character**
  - 0 — developed by Manitoba Education and Training for one credit
  - 5 — developed by Manitoba Education and Training for one-half credit
  - 1 — developed by schools or school divisions and registered by Manitoba Education and Training (includes SICs and SIPs)
  - 2 — externally developed by an educational authority and, in the case of dual credit, a post-secondary institution (e.g., university, out-of-country)
- **Third Character**
  - G — General
  - F — Foundation
  - S — Specialized
  - E — EAL
  - M — Modified
  - I — Individualized
  - C — College-based
  - U — University-based

Course Designations

Foundation (F):

Educational experiences that are broadly based and appropriate for all students and that may lead to further studies beyond the Senior Years (e.g. apprenticeship, college, and university). When a subject area is compulsory for graduation and there is only one course option, the designation will be F.

General (G):

General educational experiences for all students. Industrial arts courses may be identified as General (G) or Specialized (S) at the Grade 11 and Grade 12 levels.

Specialized (S):

Educational experiences in specialized areas leading to further studies beyond the Senior Years (e.g., apprenticeship, college, and university). Applied commerce education courses at Grades 10 to 12 and technical-vocational courses at Grades 9 to 12 are designated as Specialized.

EAL (E):

Educational experiences designed to focus on English as an additional language (EAL) learning goals in the context of the subject area, based on the student's assessed level of EAL proficiency, and to assist the student in making the transition into regular Senior Years programming in this content area. An EAL individual educational plan (EAL-IEP) is required for each student.

Modified (M):

Educational experiences intended for students with significant cognitive disabilities and where the provincial subject area curriculum outcomes have been modified to take into account the learning requirements of a student; an individual education plan (IEP) is required for each student.

Individualized (I):

Educational experiences intended for students with significant cognitive disabilities and that are developmentally and age appropriate and highly individualized to take into account the learning requirements of the student; an individual education plan (IEP) is required for each student.

Note: Students in individualized programming do not use Education and Training curricula. The designation indicates student participation in individualized programming. For example, 11I indicates year one of student participation in locally developed programming individualized for the student; 71I indicates year seven of such participation.

College-based (C):

Post-secondary courses that can be recognized for dual credit at the Grade 12 level (and in some cases, at the Grade 11 level) and also for the first year of college. These courses count towards fulfilling the credit requirements for high school graduation.

University-based (U):

Post-secondary courses that can be recognized for dual credit at the Grade 12 level and also for the first year of university. These courses count towards fulfilling the credit requirements for high school graduation.

Partnerships:

Some technical-vocational programming may be offered in partnership with post-secondary institutions. Schools are required to request approval from Manitoba Education and Training to ensure proper course codes, agreements, and teaching credentials are in place.

Course Levels

Grade 9:

All subject area curricula, except technical vocational, will be developed as foundation courses. Some technology education curricula may be developed as specialized courses. The Foundation (F) course designation will replace the General (G) course designation as new curricula come into effect.

Grade 10:

As new curricula are introduced, all subject area curricula, except technical vocational and mathematics, will be developed as Foundation (F) courses. Some curricula for technology education and mathematics may be developed as Specialized (S) courses.

Grade 11:

As new curricula are introduced, a variety of subject area curricula will be developed for different purposes, including a range of Foundation (F) and Specialized (S) courses.

Grade 12:

As new curricula are introduced, a variety of subject area curricula will be developed for different purposes, including a range of Foundation (F), and Specialized (S) courses. Courses that qualify for a U designation are first-year University courses. Those that qualify for a C designation are first-year College courses.

Note: From Grades 9 to 12, a particular Foundation, General, and/or Specialized subject area curriculum can be altered on an individual basis via a student's individual education plan following departmental requirements. The E or M course designation then applies.

No departmental regulation will prevent a student from taking a designated course in one Senior Years grade and then switching to a different designation in a later grade. For example, a student who receives an M designation for Grade 9 Science (10M) could subsequently take Grade 10 Science (20F). Similarly, a student receiving an E designation for Grade 10 Science (20E) could subsequently take Grade 11 Chemistry (30S).

Examples:

Grade 9 Introduction to Electronics (10S)

Grade 9, developed or approved by Education and Training for one credit, Specialized course.

Grade 9 Exploration of Technical-Vocational Education (15S)

Grade 9, developed or approved by Education and Training for one-half credit, Specialized course.

Grade 9 Family Studies (15M)

Grade 9, developed or approved by Education and Training for one-half credit, modified in curriculum goals and objectives or outcomes to accommodate a student with significant cognitive disabilities according to the individual education plan (IEP).

Grade 10 Textile Arts and Design (25S)

Grade 10, developed or approved by Education and Training for one-half credit, Specialized course.

Grade 11 Machine Tool Technology (30G)

Grade 11, developed or approved by Education and Training for one credit, General course.

Calculus (1103/4) 42C

Grade 12, a first-year college-level course for dual credit, developed by a college and approved by Education and Training for one-half credit, College-based course.

Introduction to Sociology (077.120) (42U)

Grade 12, a first-year university-level course for dual credit, developed by a university and approved by Education and Training for one credit, University-based course.

Granting Other Credits for Senior Years

Challenge for Credit

The Challenge for Credit Option offers students the opportunity to apply prior knowledge in a particular subject area by demonstrating achievement in the learning outcomes of that course/speciality and receiving credit for it. For information on the Challenge for Credit Option refer to www.edu.gov.mb.ca/k12/policy/gradreq/docs/choice_attacha.pdf.

Community Service Student-Initiated Project (CSSIP)

Students may earn one Community Service credit (in the form of a SIP) within the 30 credits for graduation. These SIPs consisting of volunteer service are not to be registered with the department. A Community Service SIP course code (8977) is available. Guidelines for this SIP are available at www.edu.gov.mb.ca/k12/policy/gradreq/docs/choice_attachb.pdf.

Cultural Exploration Student-Initiated Project (CESIP)

Students can gain valuable educational experience by enhancing their knowledge of their own cultural origins or a cultural group that interests them through interaction with community members such as Elders and members of cultural organizations. The skills, knowledge, and attitudes obtained from such activities can increase a student's self-esteem and maturity, strengthen cultural identity, and/or provide greater intercultural understanding and an appreciation of cultural diversity. One credit may be available to a student who participates in such activity in the Senior Years for graduation purposes. CESIPs do not require departmental registration. Additional information is available at www.edu.gov.mb.ca/k12/policy/gradreq/docs/culture_guidelines.pdf.

Distance Learning Courses

Students may take compulsory or optional courses in either print or online format, including courses delivered from outside the province. Additional information about distance learning courses is available at http://www.edu.gov.mb.ca/k12/dl/index.html.

In-Province Courses: The course codes for in-province compulsory and optional distance learning courses that are based on department curricula are the same codes that are used for in-class instruction (e.g., 0092 ELA: A Comprehensive Focus 40S).

Out-of-Province Courses: The distance learning optional courses delivered by an out-of-province educational authority are the same as those for any non-Manitoba credits. See www.edu.gov.mb.ca/k12/docs/policy/op_credits/index.html for information on granting non-Manitoba credits.

Recognizing Post-Secondary Courses for Dual Credit

Post-secondary courses can be offered to students while they are attending high school or an adult learning centre. Upon the successful completion of a post-secondary course, a student earns a post-secondary credit that counts towards fulfilling the credit requirements for high school graduation. Final grades are reported on the provincial report card as Complete or Incomplete, and upon successful completion, reported to the department as Standing ("S"). For more information, see www.edu.gov.mb.ca/k12/policy/gradreq/alt_credits.html.

School-Initiated Courses (SICs) and Student-Initiated Projects (SIPs)

Information about school-initiated courses (SICs) and student-initiated projects (SIPs) is available at www.edu.gov.mb.ca/k12/docs/support/ldc/. The most current information on registration procedures is found there.

Special Language Credit Option

This credit option provides for the recognition of Manitoba's linguistic diversity. Students proficient in languages other than English or French are eligible. Only one special language credit may be earned at each of the Senior Years. Student marks can be reported as a percentage mark; however, "S" for "Standing" may be used for granting additional/prior credit(s). For further information refer to www.edu.gov.mb.ca/k12/docs/policy/lancredits/index.html.

Substitution of Credits in Unusual Situations

In exceptional circumstances, and in discussion with parents, a school administrator may approve the substitution of an optional course for a compulsory course. Substitution of credit is permitted for any compulsory subject. School divisions/schools can decide whether to allow substitution of credits. A maximum of two substitute credits may be used toward high school graduation. If a course is substituted for another, the school must report the substitution to Education Administration Services and note the substitution on the student's transcript and report card. See https://www.edu.gov.mb.ca/k12/policy/gradreq/docs/substitution_credits_policy.pdf for the policy and https://www.edu.gov.mb.ca/k12/policy/gradreq/docs/substitution_form.pdf for the reporting form.

Technology Education—Program Groupings

The *Subject Table Handbook: Technology Education* divides available courses into the following groups. Each program group may be eligible for program cluster funding, and each course or unit in the cluster may be eligible for unit-credit funding, as outlined in the *Funding of Schools* document found at https://www.edu.gov.mb.ca/k12/finance/schfund/index.html. Please see listings of groups, program clusters, and unit-credit titles starting on page xiv of this Introduction.

Applied Commerce Education

Applied commerce education (ACE) courses are eligible for program support when a series of eight courses are offered and all eligibility requirements are met. The ACE program has replaced the business education and marketing education courses. See Appendix E.

Human Ecology

Senior Years human ecology curricula (2018) provide full and half credits in the areas of food and nutrition, textile arts and design, environmental design, and family studies. Full-credit courses are available in human ecology (made up of one-third food and nutrition, one-third textile arts and design, and one-third family studies learning outcomes) and in Grade 12 Applied Family Studies. All courses are eligible for unit-credit funding. Details are found in Appendix D.

Industrial Arts

The Senior Years curricula for industrial arts were originally prepared for Grades 10 to 12. The structure of Grades 9 to 12 resulted in the re-designation of Industrial Arts 101, 201, and 301 curricula as Grades 10, 11, and 12 respectively. Half-credit versions of the Grade 9 and Grade 10 curricula have been identified for those schools that prefer to provide half-credits. Grade 9 programming is derived from the existing middle years/ junior high curriculum for Grade 9. New course titles have been identified for the industrial arts unit-credits. Details concerning the categories of clusters are found in Appendix C.

Technical Vocational

The implementation model for technical-vocational education provides for nine credits from Grades 9 to 12. The Grade 9 credit is optional, depending on local school resources, and does not count towards the required courses for TVE program funding. The eight courses developed from Grades 10 to 12 form the foundation courses within the specific cluster. School divisions/districts are eligible for a categorical grant of $5,500.00 per approved Senior Years Technology Education Program. School divisions/districts are eligible for unit-credit support based on approved courses within Category I ($165.00 per pupil credit) and Category II ($55.00 per pupil credit). See Appendix A.

The "Exploration of Technical-Vocational Education" optional course can be used as a part of one or more TVE clusters, to allow students in Grade 9 to explore one or more skilled trade areas available in a school. The Grade 9 exploration credit does not count towards the requirements for TVE program funding.

High School Apprenticeship Program

The High School Apprenticeship Program (HSAP) falls within the Senior Years Technology Education Program. In Manitoba, apprenticeship training, including HSAP, is administered by Apprenticeship Manitoba. Apprenticeship is a training relationship involving a trainee (known as an apprentice), an employer, and Apprenticeship Manitoba. An employer hires an apprentice to meet an existing or projected skill need. A contractual arrangement, known as indenturement, is established among the employer, the apprentice, and Apprenticeship Manitoba. Students can receive up to eight credits from HSAP towards graduation. See Appendix B.

Program and Unit-Credit Categories

The program and unit-credit categories are listed under each program group and list category titles for each program cluster of courses. This is a method for categorizing the programs and unit-credit titles that is linked to the appropriate categorical funding. For more information on the criteria required for categorical program funding and unit-credit funding, please see www.edu.gov.mb.ca/k12/finance/schfund/index.html.

Appendix A: **Technical-Vocational Programs**
(This group may be eligible for program and unit-credit funding. Please see individual programs listed in this handbook for course codes and the unit-credit titles for each course in these programs).

Category:	
I	Aircraft Maintenance Technology
I	Automotive Technology
I	Aviation and Aerospace Technologies
I	Baking and Pastry Arts
I	Broadcast Media Technology
I	Cabinet and Furniture Making
I	Carpentry
I	Child Care
I	Collision Repair and Refinishing Technology
I	Culinary Arts
I	Dental Assisting
I	Dental Technology
II	Design Drafting
I	Electrical Trades Technology
I	Electronics Technology
II	Fashion Design and Technology
I	Graphic Design
I	Hairstyling
II	Health Care Assistant
I	Heavy Duty Equipment Technician
I	Horticulture
II	Hotel Hospitality
I	Interactive Digital Media
I	Jewellery and Metalsmithing
I	Machining Technology
I	Mining Engineering Technology
I	Nail Technology
I	Networking and Cyber Security
I	Photography
I	Pilot Ground School
I	Plumbing and Pipe Trades
I	Print Media
I	Refrigeration and Air Conditioning
I	Resources and Environmental Management
I	Skin Care Technology
I	Sound Engineering
I	Sustainable Energy
I	Welding Technology
*	Exploration of Technical-Vocational Education

Appendix B: **High School Apprenticeship Program—See page 1 for codes**
(This group is eligible for unit credit funding only)

Category II

Appendix C: **Industrial Arts**
(This group is eligible for unit credit funding only)

Category I

Code	Unit-Credit Title	Course Number			
7959	Graphic Communication Technology	15G	25G		
7958	Graphic Communication Technology	10G	20G	30G	40G
				30S	40S
7973	Electricity/Electronics Technology	15G	25G		
7974	Electricity/Electronics Technology	10G	20G	30G	40G
				30S	40S
7966	Power Mechanics Technology	15G	25G		
7965	Power Mechanics Technology	10G	20G	30G	40G
				30S	40S
7981	Metalwork Technology	15G	25G		
7980	Metalwork Technology	10G	20G	30G	40G
				30S	40S
7991	Woodwork Technology	15G	25G		
7990	Woodwork Technology	10G	20G	30G	40G
				30S	40S
7994	Construction Technology			40G	40S
7995	Furniture Design Technology			40G	40S
7996	Manufacturing Technology			40G	40S
7997	Applied Technology (Graphics, Electronics, Power Mech., Metalwork, Woodwork)				40S

Category II

Code	Unit-Credit Title	Course Number			
7952	Drafting Design Technology	15G	25G		
7953	Drafting Design Technology	10G	20G	30G	40G
				30S	40S
7997	Applied Technology (Drafting)				40S

Appendix D: **Home Economics/Human Ecology**
(This group of courses are eligible for unit-credit funding only)

Category II

Code	Unit-Credit Title	Grade/Course Level
0486	Human Ecology	10S 10E 10M 20S 20E 20M 30S 30E 30M 40S 40E 40M
0487	Family Studies	15S 15E 15M 25S 25E 25M 35S 35E 35M 45S 45E 45M 10S 10E 10M 20S 20E 20M 30S 30E 30M 40S 40E 40M
0488	Textile Arts and Design	15S 15E 15M 25S 25E 25M 35S 35E 35M 45S 45E 45M 10S 10E 10M 20S 20E 20M 30S 30E 30M 40S 40E 40M
0489	Food and Nutrition	15S 15E 15M 25S 25E 25M 35S 35E 35M 45S 45E 45M 10S 10E 10M 20S 20E 20M 30S 30E 30M 40S 40E 40M
0490	Environmental Design	35S 35E 35M 45S 45E 45M 30S 30E 30M 40S 40E 40M
0491	Applied Family Studies	40S 40E 40M

Appendix E **Applied Commerce Education/Business and Marketing—See page 1 for codes**
(This group is eligible for program funding only)

Contact Information

Should you require clarification regarding Senior Years Technology Education curricula, program, or policy issues, please contact the following:

Kim Poirier

Consultant, Technology Education
Instruction, Curriculum and Assessment Branch
1567 Dublin Avenue, Winnipeg MB R3E 3J5
Telephone: 204-945-7947
Toll-Free: 1-800-282-8069 (ext. 7947)
Fax: 204-948-2344
Email: kim.poirier@gov.mb.ca

Jackie Knight

Consultant, Technology Education
Instruction, Curriculum and Assessment Branch
1567 Dublin Avenue, Winnipeg MB R3E 3J5
Telephone: 204-510-0891
Fax: 204-948-2344
Email: jackie.knight@gov.mb.ca

For clarification regarding other information, please contact the following:

EIS Collection Program, File Layouts

Systems and Technology Services
Telephone: 204-926-3443
Toll-Free: 1-877-926-3443
Email: AppSupportEISCOLL@gov.mb.ca
Website: www.edu.gov.mb.ca/k12/eis

Technology Education Subject Table Handbook, Programs and Curriculum, SICs/SIPs, Codes

Instruction, Curriculum and Assessment Branch
Telephone: 204-945-0254
Toll-Free: 1-800-282-8069 (ext. 0254)
Fax: 204-948-3668
Websites: www.edu.gov.mb.ca/k12/docs/policy/sthte/index.html
(Subject Table Handbook: Technology Education)
www.edu.gov.mb.ca/k12/docs/support/ldc/index.html (SICs/SIPs)

English Program Subject Table Handbook, Programs and Curriculum, SICs/SIPs, Codes

Instruction, Curriculum and Assessment Branch
Telephone: 204-945-0254
Toll-Free: 1-800-282-8069 (ext. 0254)
Fax: 204-948-3668
Websites: www.edu.gov.mb.ca/k12/docs/policy/sth/index.html
(Subject Table Handbook)
www.edu.gov.mb.ca/k12/docs/support/ldc/index.html (SICs/SIPs)

French Language Programs Reporting and Subject Table Handbook—French Version

Bureau de l'éducation française
509–1181 Portage Avenue, Winnipeg MB R3G 0T3
Telephone: 204-945-6916
Toll-Free: 1-800-282-8069 (ext. 6916)
Fax: 204-945-1625
Website: www.edu.gov.mb.ca/m12/frpub/pol/guide_matieres

Graduating Students Summary Report, Student Year-End Status

K-12 Education Division
307–1181 Portage Avenue, Winnipeg MB R3G 0T3
Telephone: 204-945-8772
Toll-Free: 1-800-282-8069 (ext. 8772)
Fax: 204-945-8303

Student Marks and Student Records

Education Administration Services Branch
507–1181 Portage Avenue, Winnipeg MB R3G 0T3
Telephone: 204-945-0201
Toll-Free: 1-833-227-1375
Fax: 204-948-2154
Website: https://www.edu.gov.mb.ca/k12/studrec/index.html

Teachers' Certification, Employment, or Activities

Professional Certification Unit
Box 700, Russell MB R0J 1W0
Telephone: 204-773-2998
Toll-Free: 1-800-667-2378
Website: https://www.edu.gov.mb.ca/k12/profcert/index.html

Adult Learning Centre Reporting

Adult Learning and Literacy
215–800 Portage Avenue, Winnipeg MB R3G 0N4
Telephone: 204-945-4784
Toll-Free: 1-800-282-8069 (ext. 4784)
Fax: 204-948-1008
Website: https://www.gov.mb.ca/mal/all/

Independent Study/Distance Learning

Distance Learning Unit
500–555 Main Street, Winkler MB R6W 1C4
Telephone: 204-325-1700
Toll-Free: 1-800-465-9915
Fax: 204-325-1719
Website: www.edu.gov.mb.ca/k12/dl/index.html

Applied Commerce Education (home page)

Applied commerce education (ACE) consists of an optional cluster of courses for high school students interested in pursuing a future career in a commerce-related field such as economics, entrepreneurship, business, marketing, technology, or finance. Teacher Certification for this discipline is a Bachelor of Education with a major in Business Education. It should be noted that teachers who hold a Bachelor of Education with a major in Business Education do not have the required qualifications to teach a technical-vocational cluster.

Resources:

https://www.edu.gov.mb.ca/k12/learnres/

Code	Description	Credits	Grade/Level		
0309	Accounting Essentials	1.0	30S	30E	30M
0310	Accounting Systems	1.0	40S	40E	40M
0311	Applied Business Technologies	1.0	40S	40E	40M
0314	Business Communications	1.0	30S	30E	30M
0315	Business Innovations	1.0	10S	10E	10M
0316	Business Management	1.0	40S	40E	40M
0317	Creative Promotions	1.0	20S	20E	20M
0318	Economic Principles	1.0	40S	40E	40M
0319	Entrepreneurship	1.0	20S	20E	20M
0323	Marketing and Digital Commerce	1.0	40S	40E	40M
0324	Personal Finance	1.0	20S	20E	20M
0325	Retailing Perspectives	1.0	30S	30E	30M
0326	Topics and Trends in Business	1.0	40S	40E	40M
0327	Venture Development	1.0	30S	30E	30M

Human Ecology Education (home page)

Human ecology courses provide an interdisciplinary approach that integrates social and physical science theory and action through the study of everyday living. Teacher Certification for this discipline is as follows: Bachelor of Education with a teachable major or minor in Human Ecology and one of the following first degree options: Bachelor of Health Studies (B.H.St.), Bachelor of Science in Human Nutritional Sciences (B.Sc.), or Bachelor of Environmental Design (B.Env.D.). It should be noted that teachers who hold a Bachelor of Education with a major in Human Ecology do not have the required qualifications to teach a technical-vocational cluster.

Resources (Grades 5 to 8):

https://www.edu.gov.mb.ca/k12/learnres/

Resources (Grades 9 to 12):

https://www.edu.gov.mb.ca/k12/learnres/

Code	Description	Credits	Grade/Level					
0486	Human Ecology (MY)	.0	5	6	7	8		
0486	Human Ecology (SY)	1.0	10S 30S	10E 30E	10M 30M	20S 40S	20E 40E	20M 40M
0487	Family Studies	.5	15S 35S	15E 35E	15M 35M	25S 45S	25E 45E	25M 45M
	Family Studies	1.0	10S 30S	10E 30E	10M 30M	20S 40S	20E 40E	20M 40M
0488	Textile Arts and Design	.5	15S 35S	15E 35E	15M 35M	25S 45S	25E 45E	25M 45M
	Textile Arts and Design	1.0	10S 30S	10E 30E	10M 30M	20S 40S	20E 40E	20M 40M
0489	Food and Nutrition	.5	15S 35S	15E 35E	15M 35M	25S 45S	25E 45E	25M 45M
	Food and Nutrition	1.0	10S 30S	10E 30E	10M 30M	20S 40S	20E 40E	20M 40M
0490	Environmental Design	.5	35S	35E	35M	45S	45E	45M
	Environmental Design	1.0	30S	30E	30M	40S	40E	40M
0491	Applied Family Studies	1.0	40S	40E	40M			

Industrial Arts Education (home page)

Industrial arts programming provides the opportunity to actively learn in a hands-on environment with technological tools, equipment, materials, and processes to transform concepts and ideas into goods and services. Teacher Certification for this discipline is a Bachelor of Education with a major in Industrial Arts. It should be noted that teachers who hold a Bachelor of Education with a major in Industrial Arts do not have the required qualifications to teach a technical-vocational cluster.

Resources:

https://www.edu.gov.mb.ca/k12/learnres/

https://www.edu.gov.mb.ca/k12/cur/teched/ia_safe.html

Middle Years

Code	Description	Credits	Grade/Level		
0282	Construction	.0	6	7	8
0321	Drafting	.0	6	7	8
0361	Electricity/Electronics	.0	6	7	8
0443	Graphic Arts (under review)	.0	6	7	8
0444	Graphic Communications (under review)	.0	6	7	8
0611	Metalwork	.0	6	7	8
0613	Manufacturing	.0	6	7	8
0732	Power Mechanics	.0	6	7	8
0733	Plastics	.0	6	7	8
0734	Power/Energy	.0	6	7	8
0950	Woodwork	.0	6	7	8

Industrial Arts Education *(continued)* (home page)

Senior Years

Code	Description	Credits	Grade/Level			
Comprehensive Technology Education						
0214	Comprehensive Technology Education	.5	15G	15E	15M	
Automotive Technology (currently under review)						
7965	Power Mechanics Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7966	Power Mechanics Technology	.5	15G 25G	15E 25G	15M 25M	
7997	Applied Technology	1.0	40S	40E	40M	
Design Drafting (currently under review)						
7952	Drafting Design Technology	.5	15G 25G	15E 25G	15M 25M	
7953	Drafting Design Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7997	Applied Technology	1.0	40S	40E	40M	
Electronics Technology (currently under review)						
7973	Electricity/Electronics Technology	.5	15G 25G	15E 25G	15M 25M	
7974	Electricity/Electronics Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7997	Applied Technology	1.0	40S	40E	40M	

Industrial Arts Education *(continued)* (home page)

Code	Description	Credits	Grade/Level			
Graphics (currently under review)						
7958	Graphic Communications Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7959	Graphic Communications Technology	.5	15G 25G	15E 25G	15M 25M	
7997	Applied Technology	1.0	40S	40E	40M	
Metalwork (currently under review)						
7980	Metalwork Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7981	Metalwork Technology	.5	15G 25G	15E 25G	15M 25M	
7997	Applied Technology	1.0	40S	40E	40M	
Woodwork (currently under review)						
7990	Woodwork Technology	1.0	10G 20G 30S 40S	10E 20E 30G 40G	30E 40E	30M 40M
7991	Woodwork Technology	.5	15G 25G	15E 25G	15M 25M	
7994	Construction Technology	1.0	40S	40G	40E	40M
7995	Furniture Design Technology	1.0	40S	40G	40E	40M
7996	Manufacturing Technology	1.0	40S	40G	40E	40M
7997	Applied Technology	1.0	40S	40E	40M	

High School Apprenticeship Program (home page)

High School Apprenticeship Program					
9801	High School Apprenticeship Program 1	1.0	40S	40E	40M
9802	High School Apprenticeship Program 2	1.0	40S	40E	40M
9803	High School Apprenticeship Program 3	1.0	40S	40E	40M
9804	High School Apprenticeship Program 4	1.0	40S	40E	40M
9805	High School Apprenticeship Program 5	1.0	40S	40E	40M
9806	High School Apprenticeship Program 6	1.0	40S	40E	40M
9807	High School Apprenticeship Program 7	1.0	40S	40E	40M
9808	High School Apprenticeship Program 8	1.0	40S	40E	40M

Technical-Vocational Education (home page)

Technical-vocational education (TVE) provides students with the skills and competencies needed to successfully transition into the workplace, apprenticeship opportunities, post-secondary education, and their daily lives. Technical-vocational education allows students to explore, sample, specialize, and transition into a designated or non-designated trade or occupation. This pathway provides students with skills to enter the world of work or continue in further post-secondary education. Students who complete the cluster of courses in a designated stream may be eligible for the Senior Years Technology Education Program Diploma and/or advance standing in a post-secondary program.

Manitoba Education and Training (MET) has developed all TVE courses to be taught by vocationally certified teachers who

1. Have industry certification (trained journeyperson status or industry-specific certification)
2. Have experience working in that industry, or designated or non-designated trade (trained occupation)
3. Have a Technical Vocational Teacher Education Diploma.

Please note that teachers with a permanent technical-vocational teaching certificate can only teach in their industry-certified specialty area.

Code	Description	Credits	Grade/Level		
Exploration of Technical-Vocational Education					
9174	Exploration of Technical-Vocational Education	.5 1.0	15S 10S	15E 10E	15M 10M

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Code	Description	Credits	Grade/Level		
Aircraft Maintenance Technology (home page)					
8504	Exploring Aircraft Maintenance Technology	.5 1.0	15S 10S	15E 10E	15M 10M
8527	Introduction to Aircraft Maintenance Technology	1.0	20S	20E	20M
8528	Aircraft Engines	1.0	30S	30E	30M
8529	Aircraft Ground Handling	1.0	30S	30E	30M
8530	Aircraft Drawings and Documents	1.0	30S	30E	30M
8531	Aircraft Structures and Materials	1.0	40S	40E	40M
8532	Aircraft Hardware	1.0	40S	40E	40M
8533	Aircraft Structural Repair	1.0	40S	40E	40M
8534	Aircraft Systems	1.0	40S	40E	40M
Automotive Technology (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8695	Introduction to Automotive Technology	.5 1.0	15S 10S	15E 10E	15M 10M
8696	Automotive Systems and Services	1.0	20S	20E	20M
8697	Engine Fundamentals and Service	1.0	30S	30E	30M
8698	Chassis Fundamentals and Service	1.0	30S	30E	30M
8699	Drivetrain Fundamentals and Service	1.0	30S	30E	30M
8700	Automotive Electrical Systems	1.0	40S	40E	40M
8701	Vehicle Systems Part 1	1.0	40S	40E	40M
8702	Vehicle Systems Part 2	1.0	40S	40E	40M
8703	Applied Diagnostic Strategies	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Aviation and Aerospace Technologies (home page)					
8543	Exploration of Aviation and Aerospace Technologies	.5 1.0	15S 10S	15E 10E	15M 10M
8544	Introduction to Aviation and Aerospace Technologies	1.0	20S	20E	20M
8545	Aircraft Components and Functions	1.0	30S	30E	30M
8546	Aircraft Materials and Fabrication	1.0	30S	30E	30M
8547	Reciprocating Engines	1.0	30S	30E	30M
8548	Aircraft Structure and Repair	1.0	40S	40E	40M
8549	Aircraft Electrical Systems	1.0	40S	40E	40M
8561	Aircraft Systems and Propulsion	1.0	40S	40E	40M
8562	Applied Aviation Aerospace Technologies	1.0	40S	40E	40M
Baking and Pastry Arts (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8231	Exploration of Baking and Pastry Arts	.5 1.0	15S 10S	15E 10E	15M 10M
8324	Introduction to Baking and Pastry Arts	1.0	20S	20E	20M
8338	Quick Breads, Cookies, Doughnuts, and Pies	1.0	30S	30E	30M
8339	Yeast-Dough Products	1.0	30S	30E	30M
8358	Cakes, Fillings, Icings, and Decorations	1.0	30S	30E	30M
8359	Tarts and Special Pastries	1.0	40S	40E	40M
8374	Modern and Classic Desserts, and Plating Techniques	1.0	40S	40E	40M
8375	Advanced Bread Products	1.0	40S	40E	40M
8998	Advanced Baking and Pastries	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Broadcast Media Technology/Electronic Communications					
8482	*Quality Control	1.0	40S	40E	40M
8483	*Media Control	1.0	40S	40E	40M
8484	*Broadcasting Regulations	1.0	40S	40E	40M
8485	*Applied Electronic Communications	1.0	40S	40E	40M
Note: The 2019-2020 school year is the final year for reporting the courses that have an asterisk next to them. These codes will end August 31, 2020.					
Broadcast Media Technology (home page)					
9114	Exploration of Broadcast Media Technology	.5 1.0	15S 10S	15E 10E	15M 10M
9116	Introduction to Broadcast Media Technology	1.0	20S	20E	20M
9117	Multi-Camera Production for Broadcast Media	1.0	30S	30E	30M
9118	Video Post-Production for Broadcast Media	1.0	30S	30E	30M
9119	Single Camera Production for Broadcast Media	1.0	30S	30E	30M
9120	Electronic News Gathering for Broadcast Media	1.0	40S	40E	40M
9121	Documentary and Film Production for Broadcast Media	1.0	40S	40E	40M
9122	Advanced Multi-Camera Production for Broadcast Media	1.0	40S	40E	40M
9123	Applied Broadcast Media Technology	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Cabinet and Furniture Making (home page)					
9176	Exploration of Cabinetmaking	.5 1.0	15S 10S	15E 10E	15M 10M
9177	Introduction to Cabinetmaking	1.0	20S	20E	20M
9178	Cabinetmaking Tools and Equipment	1.0	30S	30E	30M
9179	Cabinet and Furniture Design	1.0	30S	30E	30M
9181	Cabinetry	1.0	30S	30E	30M
9182	Furniture Making	1.0	40S	40E	40M
9183	Advanced Cabinetry	1.0	40S	40E	40M
9185	Advanced Furniture Making	1.0	40S	40E	40M
9186	Applied Cabinet and Furniture Making	1.0	40S	40E	40M
Carpentry (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8584	Introduction to Carpentry	.5 1.0	15S 10S	15E 10E	15M 10M
8585	Carpentry Fundamentals	1.0	20S	20E	20M
9188	Carpentry Tools and Equipment	1.0	30S	30E	30M
9189	Framing	1.0	30S	30E	30M
9190	Interior/Exterior Finishing	1.0	30S	30E	30M
9191	Surveying and Concrete	1.0	40S	40E	40M
9192	Advanced Framing	1.0	40S	40E	40M
9193	Carpentry Millwork	1.0	40S	40E	40M
9194	Applied Carpentry	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Child Care (currently under review)					
8650	Introduction to Child Care	1.0	10S	10E	10M
8651	Introduction to Child Care	.5	15S	15E	15M
8652	Introduction to Infants	1.0	20S	20E	20M
8653	Introduction to Preschool	1.0	20S	20E	20M
8654	Children's Behaviour	1.0	30S	30E	30M
8655	Curriculum Ideas	1.0	30S	30E	30M
8656	Human Development	1.0	30S	30E	30M
8657	Child Care Techniques	1.0	30S	30E	30M
8658	Introduction to School Age	1.0	30S	30E	30M
8659	Introduction to Applied Child Care	1.0	30S	30E	30M
8660	Historical Perspectives	1.0	30S	30E	30M
8661	Communication Skills	1.0	30S	30E	30M
8662	Family Dynamics and Child Abuse	1.0	40S	40E	40M
8663	Curriculum Planning	1.0	40S	40E	40M
8664	Advanced Preschool	1.0	40S	40E	40M
8665	Advanced School Age	1.0	40S	40E	40M
8666	Applied Child Care	1.0	40S	40E	40M
8667	Advanced Applied Child Care	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Collision Repair and Refinishing Technology (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
9028	Exploration of Collision Repair and Refinishing Technology	.5 1.0	15S 10S	15E 10E	15M 10M
9029	Introduction to Collision Repair and Refinishing Technology	1.0	20S	20E	20M
9030	Fundamentals of Collision Repair and Refinishing Technology	1.0	30S	30E	30M
9031	Automotive Metals and Welding	1.0	30S	30E	30M
9032	Corrosion Protection	1.0	30S	30E	30M
9033	Damage Analysis and Structural Repairs	1.0	40S	40E	40M
9034	Weld-On and Bolt-On Panel Replacement	1.0	40S	40E	40M
9035	Surface Preparation and Refinishing	1.0	40S	40E	40M
9036	Colour Theory and Career Preparation	1.0	40S	40E	40M
Culinary Arts (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8790	Exploration of the Culinary Arts	.5 1.0	15S 10S	15E 10E	15M 10M
8791	Cooking Principles	1.0	20S	20E	20M
8792	Garde Manger	1.0	30S	30E	30M
8793	Patisserie and Baking	1.0	30S	30E	30M
8794	Vegetables, Fungi, Starches, and Farinaceous Products	1.0	30S	30E	30M
8795	Stocks, Soups, and Sauces	1.0	40S	40E	40M
8796	Breakfast and Dairy	1.0	40S	40E	40M
8797	Menu Planning and Food Costing	1.0	40S	40E	40M
8798	Meats, Poultry, Fish, and Seafood	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Dental Assisting (home page)					
8563	Introduction to Dental Assisting	1.0	30S	30E	30M
8564	Human Body Systems	1.0	30S	30E	30M
8593	Restorative Dentistry	1.0	30S	30E	30M
8594	Dental Office Administration	1.0	30S	30E	30M
8606	Intraoral Skills I	1.0	40S	40E	40M
8607	Intraoral Skills II	1.0	40S	40E	40M
8608	Dental Specialties	1.0	40S	40E	40M
8609	Introduction to Patient Care	1.0	40S	40E	40M
Dental Technology (home page)					
8624	Introduction to Dental Technology Removable Prostheses	1.0	30S	30E	30M
8625	Design and Fabrication of Removable Prostheses	1.0	30S	30E	30M
8626	Introduction to Orthodontics	1.0	30S	30E	30M
8627	Design and Fabrication of Orthodontic Appliances	1.0	30S	30E	30M
8628	Introduction to Fixed Prosthodontics: Crown and Bridge Technology	1.0	40S	40E	40M
8629	Design and Fabrication of Fixed Prosthodontics: Crown and Bridge Technology	1.0	40S	40E	40M
8670	Introduction to Dental Ceramic Technology	1.0	40S	40E	40M
8671	Design and Fabrication of Dental Ceramic Restorations	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Design Drafting (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8434	Introduction to Design Drafting	.5 1.0	15S 10S	15E 10E	15M 10M
8435	Design Drafting Essentials 1	1.0	20S	20E	20M
8436	Design Drafting Essentials 2	1.0	30S	30E	30M
8437	Architectural Design Drafting	1.0	30S	30E	30M
8438	Engineering Design Drafting	1.0	30S	30E	30M
8439	Advanced Engineering Design Drafting	1.0	40S	40E	40M
8648	Advanced Architectural Design Drafting	1.0	40S	40E	40M
8649	Applied Architectural Design Drafting	1.0	40S	40E	40M
8669	Applied Engineering Design Drafting	1.0	40S	40E	40M
Electrical Trades Technology (home page)					
9054	Exploration of Electrical Trades Technology	.5 1.0	15S 10S	15E 10E	15M 10M
9055	Introduction to Electrical Trades Technology	1.0	20S	20E	20M
9056	Electrical Trades DC Fundamentals	1.0	30S	30E	30M
9057	Residential Wiring	1.0	30S	30E	30M
9058	Electrical Wiring Methods	1.0	30S	30E	30M
9059	Advanced Residential Wiring	1.0	40S	40E	40M
9060	Electrical Trades AC Fundamentals	1.0	40S	40E	40M
9061	Advanced Electrical Wiring Methods	1.0	40S	40E	40M
9062	Applied Electrical Trades Technology	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Electronics Technology (home page)					
9037	Exploration of Electronics Technology	.5 1.0	15S 10S	15E 10E	15M 10M
9038	Introduction to Electronics Technology	1.0	20S	20E	20M
9039	Electronics AC Circuit Fundamentals	1.0	30S	30E	30M
9048	Semiconductor Technology and Signal Devices	1.0	30S	30E	30M
9049	Semiconductor Power Devices	1.0	30S	30E	30M
9050	Digital Devices and Basic Logic	1.0	40S	40E	40M
9051	Advanced Digital Systems	1.0	40S	40E	40M
9052	Microprocessors	1.0	40S	40E	40M
9053	Microprocessor Applications	1.0	40S	40E	40M
Esthetics: Nail Technology (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
9063	Exploration of Esthetics	.5 1.0	15S 10S	15E 10E	15M 10M
9064	Introduction to Esthetics	1.0	20S	20E	20M
9065	Manicure and Pedicure Treatments	1.0	30S	30E	30M
9066	Artificial Nails	1.0	40S	40E	40M
9067	Applied Nail Technology	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Esthetics: Skin Care Technology (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
9063	Exploration of Esthetics	.5 1.0	15S 10S	15E 10E	15M 10M
9064	Introduction to Esthetics	1.0	20S	20E	20M
9068	Basic Skin Care	1.0	30S	30E	30M
9069	Intermediate Skin Care	1.0	30S	30E	30M
9074	Advanced Skin Care	1.0	30S	30E	30M
9075	Applied Skin Care	1.0	40S	40E	40M
9076	Hair Removal	1.0	40S	40E	40M
9077	Makeup Artistry	1.0	40S	40E	40M
9078	Spa Services	1.0	40S	40E	40M
Fashion Design and Technology (home page)					
9124	Exploration of Fashion Design and Technology	.5 1.0	15S 10S	15E 10E	15M 10M
9125	Introduction to Fashion Design and Technology	1.0	20S	20E	20M
9126	Knitwear Design and Construction	1.0	30S	30E	30M
9127	Semi-Formal Wear Design and Construction	1.0	30S	30E	30M
9128	Pant Design and Construction	1.0	30S	30E	30M
9129	Tailored Garment Design and Construction	1.0	40S	40E	40M
9131	Formal Wear Design and Construction	1.0	40S	40E	40M
9132	Applied Textile Design	1.0	40S	40E	40M
9134	Applied Fashion Entrepreneurship	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Graphic Design (home page)					
9135	Exploration of Graphic Design	.5 1.0	15S 10S	15E 10E	15M 10M
9136	Fundamentals of Graphic Design	1.0	20S	20E	20M
9137	Graphic Design and Layout	1.0	30S	30E	30M
9138	Illustration for Graphic Design	1.0	30S	30E	30M
9139	Interactive Graphic Design	1.0	30S	30E	30M
9140	Advanced Graphic Design and Layout	1.0	40S	40E	40M
9141	Advanced Illustration for Graphic Design	1.0	40S	40E	40M
9142	Advanced Interactive Graphic Design	1.0	40S	40E	40M
9144	Graphic Design Portfolio	1.0	40S	40E	40M
Hairstyling (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
9113	Exploration of Hairstyling	.5 1.0	15S 10S	15E 10E	15M 10M
8312	Introduction to Hairstyling	1.0	20S	20E	20M
8313	Basic Hairstyling	1.0	20S	20E	20M
8314	Basic Haircutting and Thermal Styling	1.0	20S	20E	20M
8315	Related Salon Services	1.0	20S	20E	20M
8316	Intermediate Haircutting and Barbering Techniques	1.0	30S	30E	30M
8317	Hair Colouring	1.0	30S	30E	30M
8318	Intermediate Hairstyling and Artificial Hair	1.0	30S	30E	30M
8319	Chemical Texture Services	1.0	30S	30E	30M
8320	Advanced Hairstyling and Colouring	1.0	40S	40E	40M
8321	Advanced Haircutting and Chemical Texture Services	1.0	40S	40E	40M
8322	Salon Operation	1.0	40S	40E	40M
8323	Certificate Preparation	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Health Care Assistant CVE (currently under review)					
8800	Introduction to Health Care Assistant	1.0	10S	10E	10M
8801	Introduction to Health Care Assistant	.5	15S	15E	15M
8802	The Life Cycle	1.0	40S	40E	40M
8803	Human Relations	1.0	40S	40E	40M
8804	Safety in Health Care	1.0	40S	40E	40M
8805	Body Mechanics and Movement	1.0	40S	40E	40M
8806	Nutrition and Hygiene	1.0	40S	40E	40M
8807	Procedures and Treatments	1.0	40S	40E	40M
8808	Aging and Related Disorders	1.0	40S	40E	40M
8809	Life Management	1.0	40S	40E	40M
8810	Palliative Care	1.0	40S	40E	40M
8811	Concepts for Practice	1.0	40S	40E	40M
8812	Personal Care Skills and Needs	1.0	40S	40E	40M
8813	Health and Lifespan Development	1.0 .5	40S 45S	40E 45E	40M 45M

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Code	Description	Credits	Grade/Level		
Heavy Duty Equipment Technician (home page)					
8672	Exploration of Heavy Duty Equipment Technician	.5 1.0	15S 10S	15E 10E	15M 10M
8673	Introduction to Heavy Duty Equipment Technician	1.0	20S	20E	20M
8674	Diesel Engine Fundamentals and Service	1.0	30S	30E	30M
8675	Chassis, Frame and Undercarriage Systems	1.0	30S	30E	30M
8676	Welding Processes and Fuels	1.0	30S	30E	30M
8677	Standard Transmissions, Drivelines, Transfer Cases, and Power Takeoffs	1.0	40S	40E	40M
8678	Tires, Wheels, and Brake Assemblies	1.0	40S	40E	40M
8679	Electrical Fundamentals, Computers, and Diagnostic Equipment	1.0	40S	40E	40M
8704	Applied Heavy Duty Equipment Technician	1.0	40S	40E	40M
Horticulture (home page)					
8717	Exploration of Horticulture	.5 1.0	15S 10S	15E 10E	15M 10M
8718	Introduction to Horticulture	1.0	20S	20E	20M
8719	Applied Horticulture	1.0	30S	30E	30M
8733	Introduction to Landscape Maintenance and Construction	1.0	30S	30E	30M
8734	Introduction to Greenhouse Maintenance and Production	1.0	30S	30E	30M
8764	Advanced Horticulture	1.0	40S	40E	40M
8765	Applied Landscape Maintenance and Construction	1.0	40S	40E	40M
8766	Applied Greenhouse Maintenance and Production	1.0	40S	40E	40M
8767	Arboriculture	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Hotel Hospitality CVE (currently under review)					
8825	Beverage Services	1.0	40S	40E	40M
8826	Dining Room Skills	1.0	20S 40S	20E 40E	20M 40M
8827	Food Preparation	1.0	40S	40E	40M
8828	Customer Services	1.0	40S	40E	40M
8829	Hotel and Consumer Math	1.0	40S	40E	40M
8830	Tourism	1.0	40S	40E	40M
8831	Reception Desk Skills	1.0	40S	40E	40M
8832	Housekeeping Skills	1.0	40S	40E	40M
8833	Management Skills	1.0	40S	40E	40M
8834	Applied Reception Services	1.0	40S	40E	40M
8835	Applied Food Preparation	1.0	40S	40E	40M
8836	Applied Dining Room Services	1.0	40S	40E	40M
8837	Applied Management	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Interactive Digital Media (home page)					
9093	Exploration of Interactive Digital Media	.5 1.0	15S 10S	15E 10E	15M 10M
9094	Introduction to Interactive Digital Media	1.0	20S	20E	20M
9095	Interactive Digital Media Design	1.0	30S	30E	30M
9096	Interactive Digital Asset Creation	1.0	30S	30E	30M
9097	Coding for Interactive Digital Media	1.0	30S	30E	30M
9098	Advanced Interactive Digital Asset Creation	1.0	40S	40E	40M
9099	Advanced Coding for Interactive Digital Media	1.0	40S	40E	40M
9100	Project Management for Interactive Digital Media	1.0	40S	40E	40M
9101	Futures in Interactive Digital Media	1.0	40S	40E	40M
Jewellery and Metalsmithing (home page)					
8768	Exploration of Jewellery/Metalsmithing	.5 1.0	15S 10S	15E 10E	15M 10M
8769	Introduction to Jewellery/Metalsmithing	1.0	20S	20E	20M
8799	Lost Wax Casting	1.0	30S	30E	30M
8814	Basic Construction and Soldering	1.0	30S	30E	30M
8823	Forging and Forming	1.0	30S	30E	30M
8824	Jewellery Repair	1.0	40S	40E	40M
8838	Advanced Construction and Soldering	1.0	40S	40E	40M
8839	Gem Setting	1.0	40S	40E	40M
8840	Advanced Gem Setting	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Machining Technology (home page)					
8841	Exploration of Machining Technology	.5 1.0	15S 10S	15E 10E	15M 10M
8842	Bench Metal	1.0	20S	20E	20M
8843	Drill Press and Metal-Cutting Saws	1.0	30S	30E	30M
8844	Lathe Operations and Grinding I	1.0	30S	30E	30M
8854	Milling Operations I	1.0	30S	30E	30M
8855	Lathe Operations and Grinding II	1.0	40S	40E	40M
8856	Milling Operations II	1.0	40S	40E	40M
8857	Applied Machining and Manufacturing Technology	1.0	40S	40E	40M
8858	CNC Machining	1.0	40S	40E	40M
Mining Engineering Technology (home page)					
9145	Introduction to Mining Engineering	.5 1.0	15S 10S	15E 10E	15M 10M
9146	Mining Engineering Technology	1.0	20S	20E	20M
9147	Drafting for Mining Engineering	1.0	30S	30E	30M
9148	Geological Engineering	1.0	30S	30E	30M
9149	Surveying for Mining Engineering	1.0	30S	30E	30M
9152	Advanced Geological Engineering	1.0	40S	40E	40M
9153	Mineral Processing	1.0	40S	40E	40M
9154	Advanced Surveying for Mining Engineering	1.0	40S	40E	40M
9155	Applied Mining Engineering	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Networking and Cyber Security (home page)					
9102	Exploration of Networking and Cyber Security	.5 1.0	15S 10S	15E 10E	15M 10M
9103	Hardware and Software Essentials	1.0	20S	20E	20M
9104	Operating Systems	1.0	30S	30E	30M
9105	Networking Technologies	1.0	30S	30E	30M
9106	Cyber Security Essentials	1.0	30S	30E	30M
9107	Advanced Operating Systems	1.0	40S	40E	40M
9108	Advanced Networking Technologies	1.0	40S	40E	40M
9109	Server Administration	1.0	40S	40E	40M
9111	Applied Networking and Cyber Security	1.0	40S	40E	40M
Photography (home page)					
9156	Exploration of Photography	.5 1.0	15S 10S	15E 10E	15M 10M
9157	Introduction to Photography	1.0	20S	20E	20M
9158	Photographic Equipment	1.0	30S	30E	30M
9159	Photographic Lighting	1.0	30S	30E	30M
9160	Digital Darkroom	1.0	30S	30E	30M
9161	Advanced Photographic Equipment	1.0	40S	40E	40M
9162	Advanced Photographic Lighting	1.0	40S	40E	40M
9163	Advanced Digital Darkroom	1.0	40S	40E	40M
9164	Applied Photography	1.0	40S	40E	40M

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Technical-Vocational Education *(continued)* (home page)

Code	Description	Credits	Grade/Level		
Pilot Ground School (home page)					
9196	Exploration of Aviation	.5 1.0	15S 10S	15E 10E	15M 10M
9197	Introduction to Aviation	1.0	20S	20E	20M
9198	Principles of Flight	1.0	30S	30E	30M
9199	Meteorology and Navigation	1.0	30S	30E	30M
9201	Flight Simulation Lab	1.0	30S	30E	30M
9202	Human Factors	1.0	40S	40E	40M
9203	Advanced Aviation	1.0	40S	40E	40M
9204	Aviation Operations	1.0	40S	40E	40M
9205	Applied Aviation	1.0	40S	40E	40M
Plumbing and Pipe Trades (home page)					
8859	Exploration of Plumbing Pipe Trades	.5 1.0	15S 10S	15E 10E	15M 10M
8876	Introduction to Pluming Pipe Trades	1.0	20S	20E	20M
8877	Introduction to Piping Systems and Theories	1.0	30S	30E	30M
8878	Installation of Plumbing and Piping Systems I	1.0	30S	30E	30M
8879	Installation of Plumbing and Piping Systems II	1.0	30S	30E	30M
8981	Sanitary Venting Systems	1.0	40S	40E	40M
8982	Sanitary Drainage Systems	1.0	40S	40E	40M
8984	Installation of Plumbing and Piping Systems III	1.0	40S	40E	40M
8985	Applied Plumbing and Piping Systems	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Print Media (home page)					
8465	Introduction to Print Production	.5 1.0	15S 10S	15E 10E	15M 10M
8466	Print Production Fundamentals	1.0	20S	20E	20M
8467	Design	1.0	30S	30E	30M
8468	Pre-press	1.0	30S	30E	30M
8469	Print Production	1.0	30S	30E	30M
8470	Advanced Design	1.0	40S	40E	40M
8471	Advanced Pre-press	1.0	40S	40E	40M
8472	Advanced Print Production	1.0	40S	40E	40M
8473	Applied Print Media	1.0	40S	40E	40M
Refrigeration and Air Conditioning (home page)					
8986	Exploration of Refrigeration and Air Conditioning	.5 1.0	15S 10S	15E 10E	15M 10M
8987	Introduction to Refrigeration and Air Conditioning	1.0	20S	20E	20M
8988	System Fundamentals	1.0	30S	30E	30M
8989	Piping Fundamentals	1.0	30S	30E	30M
8991	Electrical Fundamentals	1.0	30S	30E	30M
8992	Electrical Controls	1.0	40S	40E	40M
8995	Refrigeration and Air Cooling Systems	1.0	40S	40E	40M
8996	Heating, Ventilation, and Air Conditioning Systems	1.0	40S	40E	40M
8997	Applied Refrigeration and Air Conditioning	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Resources and Environmental Management (currently under review)					
8340	Introduction to Resource Management	1.0	10S	10E	10M
8341	Introduction to Resource Management	.5	15S	15E	15M
8342	Woods Orientation	1.0	20S	20E	20M
8344	Ecology and Field Biology	1.0	30S	30E	30M
8347	Forest Management	1.0	30S	30E	30M
8349	Wildlife Management	1.0	40S	40E	40M
8350	Fisheries Management	1.0	40S	40E	40M
8354	Botany	1.0	30S	30E	30M
8355	Geographical Information Systems	1.0	40S	40E	40M
Sound Engineering (home page)					
9165	Exploration of Sound Engineering	.5 1.0	15S 10S	15E 10E	15M 10M
9166	Introduction to Sound Engineering	1.0	20S	20E	20M
9167	Music Theory for Sound Engineering	1.0	30S	30E	30M
9168	Sound Engineering for Studio Production	1.0	30S	30E	30M
9169	Sound Engineering for Live Performances	1.0	30S	30E	30M
9170	Advanced Music Theory for Sound Engineering	1.0	40S	40E	40M
9171	Advanced Sound Engineering for Studio Production	1.0	40S	40E	40M
9172	Advanced Sound Engineering for Live Performances	1.0	40S	40E	40M
9173	Applied Sound Engineering	1.0	40S	40E	40M

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Code	Description	Credits	Grade/Level		
Sustainable Energy (home page)					
8232	Exploration of Sustainable Energy	.5 1.0	15S 10S	15E 10E	15M 10M
8233	Introduction to Sustainable Energy	1.0	20S	20E	20M
8234	Sustainable Energy: Electrical Systems	1.0	30S	30E	30M
8245	Sustainable Energy: Heating/Cooling Systems	1.0	30S	30E	30M
8246	Sustainable Energy: Transportation Systems	1.0	30S	30E	30M
8279	Sustainable Energy: Solar Systems	1.0	40S	40E	40M
8292	Sustainable Energy: Wind Systems	1.0	40S	40E	40M
8293	Sustainable Energy: Biomass Systems	1.0	40S	40E	40M
9175	Current Topics in Sustainable Energy	1.0	40S	40E	40M
Welding Technology (home page)					
Resources: https://www.edu.gov.mb.ca/k12/learnres/					
8377	Exploration of Welding Technology	.5 1.0	15S 10S	15E 10E	15M 10M
8378	Introduction to Welding Technology	1.0	20S	20E	20M
8414	Metal Design/Fabrication and Oxy-Acetylene Procedures	1.0	30S	30E	30M
8474	Basic GMAW (MIG) Procedures	1.0	30S	30E	30M
8486	Basic SMAW (ARC) Procedures	1.0	30S	30E	30M
8487	Advanced GMAW (MIG) Procedures	1.0	40S	40E	40M
8488	Advanced SMAW (ARC) Procedures	1.0	40S	40E	40M
8489	Advanced Metal Design/Fabrication	1.0	40S	40E	40M
8503	Applied Specialties and Qualifications	1.0	40S	40E	40M

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