Murdoch MacKay Collegiate

2025-2026

Course Handbook

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Overview

Murdoch MacKay Collegiate requires students to complete compulsory courses in English, Mathematics, Science, Social Studies and Physical Education. In addition, we offer a large number of optional courses.

This Program Guide is intended to assist students in planning their selection of courses as they relate to future careers.

To graduate from Murdoch MacKay, students require a minimum of 30 credits.

Decisions about careers and the courses taken should be made after discussions with teachers, administrators, counsellors and parents. Aptitudes, interests and past performances on classroom assessments also help to determine what courses should be selected. Students must be aware of the entrance requirements for any post-secondary education. The counsellors at Murdoch MacKay are available to assist students throughout the school year in this important matter.

To assist students and parents in making reasonable choices, the school will follow these procedures:
a) Counsellor presentations to review courses and the registration process.

b) Students and parents discuss and complete the Registration Form.

c) The staff reviews choices made – parents will be contacted if concerns arise.

d) The Master Timetable is prepared based on course requests.

e) Students are timetabled according to their registration form and course availability.

f) Option courses may have to be re-selected if timetable conflicts occur.

g) When all the timetables have been finalized, classes are organized and balanced for size and composition.

h) Students are issued their actual individual timetable for the school year around the first day of school.

School counsellors will consider timetable changes during the first week of a semester.

SEMESTER SYSTEM AND STUDENT ASSESSMENT

Our school year is divided into two semesters. The first semester runs from September until the end of January, with the second semester extending from February until the end of June. Some courses are taken all year (non-semester). Student initiated course withdrawals may not occur after December 10th in first semester or May 10th in second semester.

Student assessment focuses on observations, conversations and products that highlight learning and identify targets for improvement. Homework and independent review on a regular basis are essential for student success. A report card will be sent home at mid and end points of each semester.

Overview

BEGIN PLANNING YOUR COURSES FOR NEXT YEAR...

1. Read Murdoch MacKay Collegiate's Program Guide.
2. Review **Academic** courses – ask teachers which courses you should select (i.e. Math, English). Check recommended prerequisites and post-secondary requirements. Different university/college programs may require specific courses for admissions.
3. Review the **Optional Courses** - select courses based on your interests, strengths & abilities.
4. Review the **Technical Education** section.
5. Register for compulsory courses you require or have not successfully completed.
6. Register for optional courses.
7. Discuss choices with parents/guardian and have them sign the registration form.
8. Registration will be done online for current Murdoch students in March
9. Questions about course selection(s) or post-secondary requirements? Make an appointment with one of the school counsellors.

Overview

SEMESTER SYSTEM

Students generally take one-half of their course load the first semester and the second half of their course load in semester two. Students are strongly advised to keep their course load balanced to ensure the greatest opportunity for success in their studies. Final assessments may be written at the end of the first semester and at the end of the second semester.

CREDIT AND COURSE CODES

A credit is earned by successfully completing 110 hours of instruction. A half-credit represents 55 hours of instruction. Students must earn a minimum of 30 credits to graduate from high school.

A student may earn a French Immersion Diploma if they have earned a minimum of 14 credits where the course was taught in French (for students in Grade 11 and 12 in the 2025-2026 school year) or 15 credits (for students in Grade 9 and 10 in the 2025-2026 school year).

Each course is assigned an alpha-numeric code formed as follows:

First Character

1 – courses developed for Grade 9
2 – courses developed for Grade 10
3 – courses developed for Grade 11
4 – courses developed for Grade 12

Second Character

0 – developed or approved by Manitoba Education for 1 credit
5 – developed or approved by Manitoba Education for ½ credit
1 – developed by the school or division (includes SICs- School Initiated Courses and SIPs – Student Initiated Projects). These courses may be full or ½ credit courses.
2 – developed elsewhere and approved by Manitoba Education (Advanced Placement).

Third Character

AP	Advanced Placement	Academically challenging advanced placement AP courses at the Grade 12 level that are recognized for credit or placement at most post-secondary institutions.
E	English as an Additional Language	Courses designated for newcomers who require assistance in English.
F	Foundation	Courses which are broadly based and appropriate for all students and which may lead to further studies beyond Grade 12.
G	General	Courses that provide a general educational experience.
M	Modified	Courses in which the number, essence, and content of the curriculum outcomes are altered.
S	Specialized	Courses that provide learning experiences, knowledge and skills that may lead to further studies beyond Grade 12.

Diplomas Available

Grade 9 to Grade 12, students earn credits towards high school graduation. To obtain a Manitoba high school diploma, students must accumulate a minimum of 30 credits from a combination of compulsory and optional courses. The two diplomas available at Murdoch MacKay Collegiate include:

SENIOR YEARS ENGLISH DIPLOMA

The Senior Years English Diploma provides a sound education at the secondary level. It is organized to maintain balance between the core subject areas of ELA, Mathematics, Social Studies, Science and Physical Education. Students select additional option courses to meet their specific needs and interests. This program may provide a basis for further education at the university of college level.

TECHNOLOGY EDUCATION SENIOR YEARS DIPLOMA

The Senior Years Technology Education Diploma also offers a balance between core subject areas and a technology vocational area of the students' choice, with opportunities to select options. Murdoch MacKay Collegiate offers 5 separate Technology Education Diplomas, each of which provides training skills at the job entry level. When choosing courses, students should ensure they meet the entrance requirements of the post-secondary education and training, apprenticeship or private vocational training they plan to pursue.

AUTOMOTIVE TECHNOLOGY

CARPENTRY

FASHION TECHNOLOGY

WELDING TECHNOLOGY

METALS & AEROSPACE

Graduation Requirements

GRADE 9	GRADE 10	GRADE 11	GRADE 12
Compulsory – 5 credits	**Compulsory – 5 credits**	**Compulsory – 4 credits**	**Compulsory – 5 credits**
Language Arts – 1 credit Life/Work Exploration – .5 credit	English – 1 credit	English – 1 credit	English – 1 credit
Transitional Mathematics –1 credit Mathematics – 1 credit	Mathematics – 1 credit	Mathematics – 1 credit	Mathematics – 1 credit
Physical Education – 1 credit	Physical Education – 1 credit	Physical Education – 1 credit	Physical Education – 1 credit
Canada in the ContemporaryWorld – 1 credit	Geography – 1 credit	History of Canada – 1 credit	
Science - 1 credit	Science - 1 credit		
Options – min. 3 credits	Options – min. 3 credits	Options – min. 3 credits	Options – min. 3 credits
9.5 credits	**8 credits**	**7 credits**	**minimum 6 courses**
30 credits required for graduation			

Graduation Requirements Technology Education

GRADE 9	GRADE 10	GRADE 11	GRADE 12
Compulsory – 5 credits	**Compulsory – 5 credits**	**Compulsory – 4 credits**	**Compulsory – 5 credits**
Language Arts – 1 credit Life/Work Exploration – .5 credit	English – 1 credit	English – 1 credit	English – 1 credit
Transitional Mathematics –1 credit Mathematics – 1 credit	Mathematics – 1 credit	Mathematics – 1 credit	Mathematics – 1 credit
Physical Education – 1 credit	Physical Education – 1 credit	Physical Education – 1 credit	Physical Education – 1 credit
Canada in the ContemporaryWorld – 1 credit	Geography – 1 credit	History of Canada – 1 credit	
Science - 1 credit	Science - 1 credit		
	Technical Vocational- 2 credits	Technical Vocational- 3 credits	Technical Vocational- 3 credits
Options – min. 3 credits	Options – 1course	Options	Options
9.5 credits	**8 credits**	**7 credits**	**minimum 6 courses**
30 credits required for graduation			

PROGRAM OVERVIEW

RETSD sTeam labs offer an integrated programming structure that provides increased student choice in learning to earn credits. Rather than subjects being isolated, the curriculum from different subjects are integrated while students work with a team of teachers in larger blocks of time. The scheduling provides opportunities for deep thinking about complex ideas.
sTeam promotes Science and Technology interpreted through Engineering and the Arts, all based in Mathematical elements. Content that is learned in the courses in sTeam and other courses will be used to engage students in creation and design. Students will develop skills and global competencies such as communication, critical thinking, creativity, collaboration, connection to self, and citizenship. Students will connect with industry partners at each grade level to assist them to apply the skills and knowledge to their future pathways in a variety of fields.

sTeam Grade 10

Students earn credits in the following areas: Science, English Language Arts, and Arts. Working in one three hour block of time each day for a semester, students utilize the design thinking process, develop project management strategies, and share their work in various settings. Students will learn to use different technologies to creatively implement their understanding of curriculum through smaller class projects to improve their global competencies. Contact with industry through guest speakers, and site visits allow students to make connections between the skills they are learning in class and the skills needed for life beyond high school.

sTeam Grade 11

Students earn credits in the following areas – Canadian History and English Language Arts: Comprehensive Focus. Working in a two hour block of time each day for a semester, students use historical thinking concepts to inform their thinking about present societal issues. They will continue to build their global competencies and digital literacy skills by connecting with a variety of audiences. Projects are of an expanded scope and utilize the design thinking process to design and manage their ideas. Contact with industry becomes more personalized through students making individual connections as well as larger group guest speakers and site visits.

sTeam Grade 12 (prerequisite Grade 10 and/or Grade 11 sTeam)

Students earn two credits in the following areas – English Language Arts: Comprehensive Focus and a choice of English Language Arts: Transactional Focus, Global Issues or Visual Art. Working in a two-period block of time each day, students create and manage their own capstone projects. Students will connect and collaborate with industry partners to apply global competencies in a real-world context. Students will be given the semester to complete the project and will utilize the capstone to highlight their personal development, culminating in a final presentation where they share their learning and growth. Students will be connected to an industry mentor in their area of interest.

Intensive Technical Vocational Program Information

RETSD students can apply to take Technology Education courses at Kildonan-East Collegiate and Murdoch MacKay Collegiate, beginning in their grade 11 year. The exception to this is Hairstyling, which begins in their grade 10 school year. The courses being offered at each school include:

Kildonan-East Collegiate

Automotive Technology
Baking and Pastry Arts
Carpentry
Culinary Arts
Collision Repairs and Refinishing Technology
Electrical Trades Technology
Graphic Design
Hairstyling
Interactive Digital Media
Photography
Refrigeration and Air Conditioning

Murdoch MacKay Collegiate

Carpentry
Fashion Technology

Successful applicants will spend one semester in grade 11 at their home school completing academics and one semester at either Kildonan-East Collegiate or Murdoch MacKay Collegiate, taking their selected vocation. The same applies for Grade 12.

Program Requirements

- Two-year commitment
- Attendance in good standing
- On track for graduation
- Awareness and commitment to complete an all-day course every day for a full semester
- Be responsible for own transportation to and from Kildonan-East Collegiate or Murdoch MacKay Collegiate.
- Completion of Expression of Interest application
- Students are responsible for purchasing/supplying their own safety clothing (PPE) and supplies.
- Students are responsible for ensuring appropriate dress and providing PPE and supplies as indicated for each vocation.

For more information, please refer to the RETSD Technical Vocational Handbook on our school website.

Advanced Placement

ADVANCED PLACEMENT COURSES Advanced Placement (AP42) courses provide students with an opportunity to explore university-level coursework while studying in a familiar high school setting. Students begin with advanced courses in their grade 11 year in preparation for the Advanced Placement 42S courses. Advanced Placement 42S courses are offered through an external organization, The College Board. In order to ensure consistency and academic rigour, the College Board establishes the curriculum for each course. A final exam is held in May for each Advanced Placement 42 course and students are scored on a scale of 1-5 on the exam. Depending on the exam result and the guidelines for the university of choice, a student may be recognized for equivalent course credit at the university level. Students may choose to enroll in just one Advanced Placement course or may choose multiple courses depending on their interest.

Advanced courses (30SA/40SA) prepare students for the Advanced Placement (AP42) courses by giving them opportunities to build additional skills while they move at an accelerated pace and explore content with additional depth and breadth.

Any one course or more may be taken based on interest and aptitude.	
GRADE 11	**GRADE 12**
Pre-Calculus Mathematics 30S Advanced (Sem 1) Pre-Calculus Mathematics 40S Advanced (Sem 2)	Calculus AB 42AP
English: Literary Focus 30S Advanced (S1) English: Literary Focus 40S Advanced (S2)	English Literature and Composition 42 AP
Biology 30S Advanced or Biology 30S	Biology 42 AP
Chemistry 30S Advanced or Chemistry 30S	Chemistry 40S Advanced (S1) Chemistry 42 AP (S2)
Physics 30S Advanced or Physics 30S	Physics 1 42 AP

Please note that students with an interest in Advanced Placement may choose one or more courses. Advanced Placement courses have a 42AP designation.

High School Apprenticeship Program (HSAP)

The High School Apprenticeship Program (HSAP) is on -the-job experience with an employer. HSAP provides practical, paid, work experience and credit towards your high school diploma. The purpose of HSAP is to provide an opportunity for early entry in the trades and build interest with youth. Students are then able to transfer their hours of HSAP on-the-job training after graduation to a Level One apprenticeship training program in any apprenticeship program. This program is ideal for students who:

- Are currently working in the skilled trades
- Are interested in a career in the skilled trades
- Are enthusiastic about joining the workforce
- Have a parent or relative currently working in the trades

HSAP provides practical, paid, work experience and the opportunity to:

- Get hands-on experience
- Earn up to 8 supplemental high school credits
- Obtain financial incentives that cover tuition costs for post-secondary training
- Avoid long wait times for post-secondary trade training
- Apply you on-the-job training hours to continued, full-time apprenticship training after graduation

Students eligible for HSAP are:

- 16 years of age or older
- Currently enrolled in high school courses (academic or technical vocational stream)
- Either employed in a qualifying trade (over 40 trades) or looking for employment
- Have an employer who is willing to take them on as an apprentice

More information about Apprenticeship can be found at:

- River East Transcona School Division Website: www.retsd.mb.ca

Other Credit Options

Community Service Credit (Student-Initated Project)

The skills, knowledge, and attitudes gained through community service can increase a student's confidence and maturity, and provide more awareness of the needs of others in the community. Students participating in such an activity may earn a credit towards graduation. Students must apply through Student Services before beginning a service project.

Credit for Employment

Students gain valuable skills through on-the-job work experience, therefore the Credit for Employment (CFE) credit is available to provide students with the opportunity to earn up to 2 high school credits for paid employment. CFE can enrich students' understanding of the relevance of education and the importance of develping career readiness. Students must be 16 years of age or older and are responsible for finding their own employment. Students must hold a minimum of a 0.5 credit in a career development course (Life Exploration 10S) to be eligible.

Special Language Credit

Students can apply to gain up to four academic creidts in a Heritage language. More information is available from our Student Services Department. Exams can be written in either fall or spring.

Cadets Credit

Students can earn up to two credits for successful completion of the Cadet basic and advanced training programs. The Cadet credits are recognized **only** as additional credits beyond the minimum 30 credits required for graduation. Students wishing to add these credits to their transcript should visit Student Services.

Private Music Option Credit

The Private Music credits are recognized **only** as additional credits beyond the minimum 30 credits required for graduation. Students wishing to add these credits to their transcript should visit Student Services.

Royal Winnipeg Ballet Credit

Students can be granted a credit for the Royal Winnipeg Ballet. The Royal Winnipeg Ballet credits are recognized **only** as additional credits beyond the minimum 30 credits required for graduation. Students wishing to add these credits to their transcript should visit Student Services.

ENGLISH

OVERVIEW

The goal of the regular stream (10F, 20F, 30S, 40S) is to ensure that graduating students possess communication skills (reading, writing, speaking, listening, viewing and representing) beyond or at least equivalent to the level expected by Manitoba Education.

The goal of the advanced stream (30SAdv, 40SAdv & 42AP) is to meet the guidelines set out by Manitoba Education as well as to provide an enriched and accelerated program based on classic and contemporary literature.

English 10F

The first year of ELA in high school focuses on acquiring skills that facilitate comprehension and use of language in a variety of transactional and literary contexts. Students will read and produce a wide variety of transactional and literary texts, English 10F will build skills in the following general outcomes: exploring thoughts, ideas, feelings and experiences; comprehending and responding personally and critically to texts; managing ideas and information; enhancing the clarity and artistry of communication; and celebrating and building community (5 General ELA Outcomes Manitoba Education).

English 20F

This course continues to focus on acquiring skills that facilitate comprehension and use of language in a number of different transactional (real world) and literary contexts. Students will read, analyze and write a wide variety of texts. Students will explore thoughts, ideas, feelings and experiences; comprehend and respond personally and critically to texts; manage ideas and information; enhance the clarity and artistry of communication; and celebrate and build community (5 General ELA Outcomes Manitoba Education).

English 30S Comprehensive Focus

English Comprehensive Focus is aimed at students who want to experience both transactional and literary texts. Students will read, study and produce a wide variety of texts. English 30S Comprehensive Focus further builds on the skills developed in English 20F with respect to exploring thoughts, ideas, feelings and experiences; comprehending and responding personally and critically to texts; managing ideas and information; enhancing the clarity and artistry of communication; and celebrating and building community (5 General ELA Outcomes Manitoba Education).

ENGLISH

English 30S Literary Focus

This course builds upon the foundation established in English 20F Advanced. The analytical approach to the study of literature continues to be stressed, with an added emphasis on the writing style of authors. English 30S Literary Focus further builds on the skills with respect to exploring thoughts, ideas, feelings and experiences; comprehending and responding personally and critically to texts; managing ideas and information; enhancing the clarity and artistry of communication; and celebrating and building community (5 General ELA Outcomes Manitoba Education).

English 30S Literary Advanced

This course exposes students to a variety of text which may include novels, plays, poems, non-fiction, and short prose in order to offer a wide range of cultural, historical and literary works to students. The analytical approach to the study of literature continues to be stressed with an added emphasis on the purpose and writing style of authors as well as the writing style of students taking the course.

Students interested in taking 42AP English Literature and Composition are encouraged to register for this course.

English 30S Transactional Focus

English 30S Transactional Focus is an introduction to the non-fiction world, print and visual media. This course emphasizes the practical use of language, language that informs, directs, persuades, analyzes, argues and explains. The focus of this course is how language in real world situations is shaped and formed according to need or audience; students will engage with and compose texts primarily for practical/real world purposes.

GRADE 12

In Grade 12, students may choose from a variety of ELA courses; ONE English credit is mandatory for graduation. If students are planning to attend post-secondary education, it is recommended a second English credit be taken.

English 40S Comprehensive Focus

Comprehensive Focus provides students with opportunities to explore and produce a broad range of texts. This course develops and refines a range of literary skills that deepen engagement with and appreciation of a variety of texts. Students engage with and compose texts that inform, persuade, analyze, foster understanding and empathy, reflect culture, express feelings and experiences.

English 40S Transactional Focus

Transactional Focus examines the non-fiction world, print and visual media. This course emphasizes the pragmatic use of language, language that informs, directs, persuades, analyzes, argues and explains. The focus of this course is how language in real world situations is shaped and formed according to need or audience; students will engage with and compose texts primarily for practical/real world purposes.

ENGLISH

English 40S Literary Focus

Literary Focus students examine and compose a variety of literary texts and properties of language to convey experience, ideas and perspectives and deepen their appreciation of language. Students use language effectively to respond to texts, to manage diverse ideas and information, to communicate and to learn. Students planning on taking courses in University in the Humanities should consider this course.

English 40S Literary Advanced

This course provides students the opportunity to examine and compose a variety of literary texts. Students explore properties of language to convey experience, ideas, and perspectives as they deepen their appreciation of literature. Students develop the skills required to respond to texts, to manage diverse ideas and information, to communicate effectively, and to learn about the connection between purpose and writing style.

Students interested in taking 42AP English Literature and Composition are encouraged to register for this course.

42AP English Literature and Composition

AP English Literature and Composition in an introductory university level literary analysis course. The course focuses on reading, analyzing, and writing about imaginative literature (fiction, poetry, drama) from various periods. Students engage in close reading and critical analysis of imaginative literature to deepen their understanding of the ways writers use language to provide both meaning and pleasure. As they read, students consider a work's structure, style, and themes, as well as its use of figurative language, imagery, and symbolism. Writing assignments include expository, analytical, and argumentative essays that require students to analyze and interpret literary works.

MATHEMATICS

OVERVIEW

When choosing a math course, students should consider their interests, both current and future. Students and parents are encouraged to research the admission requirements for post-secondary programs of study as they vary by institution and by year.

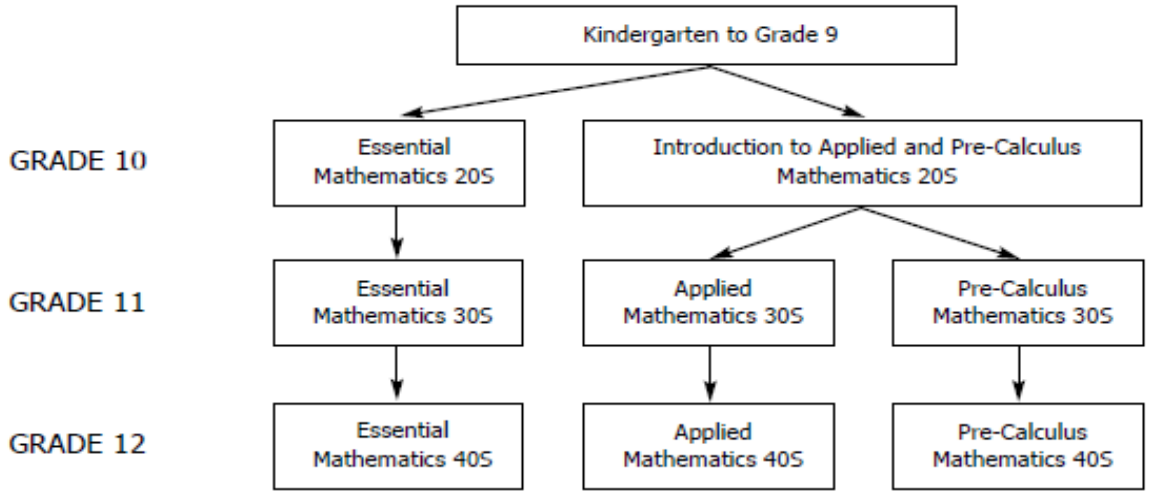
Applied Mathematics
This pathway is designed to provide students with the mathematical understandings and critical-thinking skills identified for post-secondary studies in programs that do not require the study of theoretical calculus.

Essential Mathematics
This pathway is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into the majority of trades and for direct entry into the workforce.

Pre-Calculus Mathematics
This pathway is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into post-secondary programs that require the study of theoretical calculus.

Advanced Program:
This pathway is designed for those students who are academically advanced in their mathematics studies. A student would follow this pathway if they are interested in gaining an Advanced Placement (AP) credit in Grade 12.

REGULAR PROGRAM PATHWAYS:



MATHEMATICS

Math 10F

Recommended Prerequisite: Grade 8 Mathematics

Topics of study for this course would include: Rational Numbers and Square Roots, Exponents and Powers, 3D Objects and 2D Shapes, Polynomials, Algebra, Inequalities, Linear Relations, Similarity and Transformation, Statistics and Probability, and Circle Geometry.

Essential Mathematics 20S

Recommended Prerequisite: Grade 9 Mathematics

Topics of study for this course would include: Analysis of Games and Numbers, Personal Finance, Measurement, 2D Geometry, Trigonometry and Consumer Decisions.

Introduction to Applied and Pre-Calculus Mathematics 20S

Recommended Prerequisite: Grade 9 Mathematics

Topics of study for this course would include Radicals and Exponents, Polynomials and Factoring, Coordinate Geometry, Linear Relations and Functions, Systems of Equations and Trigonometry.

Essential Mathematics 30S

Recommended Prerequisite: Essential Mathematics 20S

Topics of study for this course would include: Interest and Credit, 3D Geometry, Statistics, Managing Money, Relations and Patterns and Trigonometry.

Applied Mathematics 30S

Recommended Prerequisite: Introduction to Applied and Pre-Calculus Mathematics 20S

Topics of study for this course would include: Quadratic Functions, Scale, Statistics, Systems of Inequalities, Trigonometry and Properties of Angles and Triangles.

Pre-Calculus Mathematics 30S

Recommended Prerequisite: Introduction to Applied and Pre-Calculus Mathematics 20S

Topics of study for this course would include: Quadratic Equations, Radicals, Quadratic Functions, Rational Expressions and Equations, Trigonometry, Systems, Inequalities and Absolute Value and Reciprocal Functions.

Pre-Calculus Mathematics 30S Advanced

This course builds on the concepts learned in Introduction to Applied and Pre-calculus Mathematics 20S. Topics of study include algebra, quadratic functions, absolute value, reciprocal functions, and trigonometry.

Students interested in taking the 42AP Calculus AB in their Grade 12 year should register for this course as well as the Pre-Calculus Mathematics 40S course in their Grade 11 year.

MATHEMATICS

Essential Mathematics 40S

Recommended Prerequisite: Essential Mathematics 30S

Topics of study for this course would include: Statistics, Precision Measurement, Home Finance, Vehicle Finance, Trigonometry and Probability.

Pre-Calculus Mathematics 40S

Recommended Prerequisite: Pre-Calculus Mathematics 30S or Pre-Calculus 30S Advanced

Topics of study for this course would include: Circular Functions, Transformations, Exponents and Logarithms, Permutations and Combinations, Binomial Theorem, Function Operations, Radical and Rational Functions and Trigonometric Identities.

Applied Mathematics 40S

Recommended Prerequisite: Applied Mathematics 30S

Topics of study for this course would include: Probability, Personal Finance, Logic, Permutations and Combinations, Sinusoidal Functions, Polynomial Functions and Exponential and Logarithmic Functions.

42AP Calculus AB

Recommended Prerequisite: Pre-Calculus Mathematics 40S

AP Calculus AB is an introductory university level calculus course. Students cultivate their understanding of differential and integral calculus through engaging with real-world problems represented graphically, numerically, analytically, and verbally and using definitions and theorems to build arguments and justify conclusions as they explore concepts like change, limits, and the analysis of functions. A graphing calculator is required.

PHYSICAL EDUCATION

COURSE DESCRIPTION:
Grade 9 & 10

All students will be given the opportunity to, and be encouraged to, participate in a variety of physical activities and sports. These activities aim to provide an environment that is engaging and motivating, and which can help to develop a more positive self-image. Through the development of related social and physical skills, students will achieve a good foundation for a healthy lifestyle in the future. The integration of health topics are to help students choose and practice responsible behaviour conducive to maintaining and enhancing health. All students are expected to participate in class activities and complete all compulsory work in order to obtain credit.

Topics which may be covered include: archery, badminton, basketball, cross-country skiing, C.P.R., field hockey, first aid, golf, power walking, low organized games, racquetball, lacrosse, softball, soccer, tennis, nutrition, drug & alcohol awareness, human sexuality, flag football, track and field events, ultimate frisbee, winter activities, volleyball, yoga, weight/resistance training, and other personal fitness/wellness related activities).

Grade 9:
10F Physical Education - compulsory --- 1 credit

Grade 10:
20F Physical Education - compulsory --- 1 credit
Prerequisite: Grade 9 (10F Physical Education)

COURSE DESCRIPTION:
Grade 11 & 12

These compulsory full credit courses are designed to help youth take greater ownership of their own physical fitness, to encourage them to seek out activities that interest them, and to engage in active lifestyles into their futures. Students will study topics related to fitness management, mental health, substance use and abuse prevention, and the social impact of sport. The focus of this content will be on health and personal planning. These topics will make up the core component of the course content. Students will be required to develop and implement part of the course on their own time in a personal physical activity plan as part of the physical activity practicum. Students will be introduced to safety and risk management planning to minimize the associated risks of the activities they have chosen.

As part of earning a credit for this course, students will be required to: complete 5 core computer modules, log a minimum of 55 hours of moderate/vigorous physical activity outside of class time, complete the teacher flexible component of the course, depending on the stream chosen, and present an exit portfolio. Students will be graded for completion of the course with either a Complete or Incomplete designation.

NOTE: Parents/guardians will be required to review the student's physical activity plan and sign a Parent Declaration and Consent Form acknowledging their approval of the chosen activities and acceptance of the responsibility for risk management, safety, and supervision. Parents/guardians will also be required to verify the entries of the student's physical activity log through a sign-off procedure upon request.

PHYSICAL EDUCATION

Grade 11:

30F – Active Healthy Lifestyles
compulsory - 1 credit
Recommended Prerequisite: PE 20F

Grade 12:

40F – Active Healthy Lifestyles

Program # 1 Recreational Fitness for All:

This program is designed for the general population. Students will explore a variety of current health issues and participate in a number of different physical activities of interest to them. This highly individualized stream offers core curricular outcomes and is activity based.

Program # 2 Outdoor Pursuits:

This program caters to those students who have an interest in outdoor pursuits and excursions. Students wanting to pursue this stream will develop skills to safely experience the natural environment and greatly expands the recreation opportunities available to you now and in the future. This stream explores a number of diverse environmental topics, issues and pursuits. We recommend this program to students interested in developing leadership and team-building skills, as well as the facilitation of maintaining healthy lifestyle practices.

Program #3 Women's Wellness:

This program caters to **female students** who are interested in critically examining issues in women's health. Biological, socio-cultural, psychological, historical, and political processes that shape and define women's health and healthcare experiences will be explored, including ways in which medical knowledge has been constructed and applied to women's bodies. Students would have the opportunity to explore and participate in activities of interest to them.

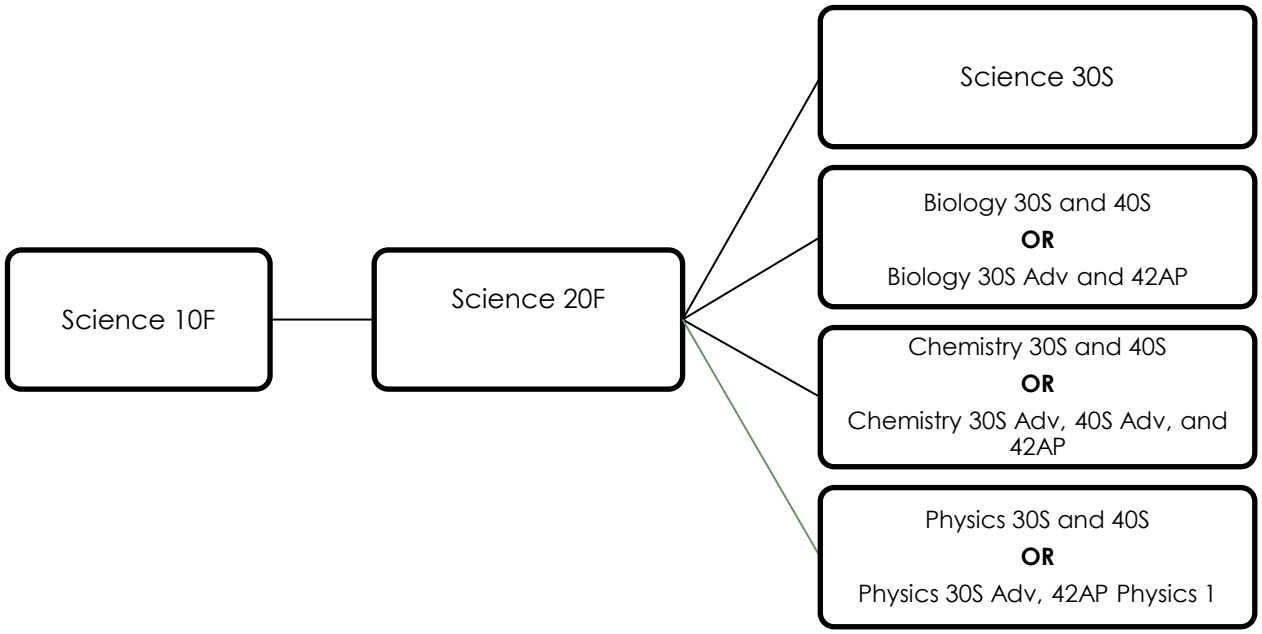
Program #4 Leadership:

This program caters to those students interested in pursuing and developing leadership skills above and beyond a regular PE program. Students wanting to pursue this stream will be required to complete a minimum of 20 volunteer hours. The students will be provided with, or seek out on their own, approved volunteer experiences within the school or community setting. Department approval is required to register for this stream.

SCIENCE

OVERVIEW

Grade 9 Science and 10 Science are general courses offering units in biology, chemistry and physics. At the Grade 11 and 12 levels students may take specialized courses in Topics in Science, Biology, Chemistry, and Physics. Students may take any number of these specialized courses.



Science 10F

This course examines the atoms that make up all matter on earth. Discover how electricity has been harnessed to operate machinery, uncover how our body tissues grow and regenerate, and explore the far-off stars and planets of our galaxy. Some learning activities and assignments require hands-on experiments using household items.
The course is structured as follows:

- Module 1: Reproduction
- Module 2: Atoms and Elements
- Module 3: The Nature of Electricity
- Module 4: Exploring the Universe

Science 20F

Recommended Prerequisite: Science 10F

This course is a continuation of Science 10F in the areas of Chemistry, Physics, Biology and Earth and Space Science. In Chemistry, studies continue on the topics of the periodic table, elements, compounds, formulas and chemical reactions. In Physics, students study force, motion, energy, momentum and impulse in the context of collisions and automobile safety. In Biology the topic of ecology is studied. The Earth and Space Science unit explores weather including violent storms.

SCIENCE

Science 30S (Topics in Science)

Recommended Prerequisite: Science 20F

This course is a general science course that looks at the practical application of science in a wide range of fields that are of current interest. Topics that may be pursued include space science, ecology, energy, weather, biotechnology, agriculture, and forensics. Other topics may also be pursued as time and interest allows.

Biology 30S

Recommended Prerequisite: Science 20F

The focus of Biology 30S is Human Biology. In order to understand the complexity of human systems, students will learn about the underlying mechanisms and processes (homeostasis) that govern their normal functioning. The human systems to be studied include: Digestive, Transport and Respiration, Excretory and Waste Management, Protection and Control. An important goal of this course is to develop student appreciation of body systems to promote making good choices regarding nutrition and lifestyle for improved wellness and longevity. Laboratory work will include the dissection of a preserved fetal pig.

Biology 30S Advanced

Recommended Prerequisite: Science 20F

This course is designed to help students develop a conceptual framework for modern biology and an appreciation of science as a process. Students will be involved in laboratory work with the goal of developing an understanding of concepts including the science of life, evolution, energy transfer, interdependence in nature and science, and the anatomy and physiology of all the major human body systems.

Students interested in taking 42AP Biology are encouraged to register for this course in their Grade 11 year.

Biology 40S

Recommended Prerequisite: Biology 30S

The two main areas of study in this course, Genetics and Biodiversity, will prepare students for university while they develop skills in interpretation and evaluation of biological concepts. Students will relate scientific concepts to everyday life as they explore the Understanding of Biological Inheritance, Mechanisms of Inheritance, Evolutionary Theory and the relevance of Organizing and Conserving Biodiversity. Laboratory work will include a common procedure used in Molecular Biology and Biochemistry known as Gel Electrophoresis.

42AP Biology

AP Biology is an introductory university level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore topics like evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions.

SCIENCE

Chemistry 30S

Recommended Prerequisite: Science 20F

Chemistry requires excellent math skills and an understanding of the processes of mathematics, problem solving, and algebra. The major areas of study are the atom, the periodic table, physical properties of matter, chemical reactions, stoichiometry, gases and solutions.

Chemistry 30S Advanced

This course is designed to expose students to topics in Chemistry such as the physical properties of matter, gases and the atmosphere, chemical reactions, solutions, as well as organic chemistry. This course will also incorporate some units from the Chemistry 40S curriculum.

Students interested in taking 42AP Chemistry are encouraged to register for this course in their Grade 11 year.

Chemistry 40S

Recommended Prerequisite: Chemistry 30S

Chemistry 40S is a prerequisite for university chemistry. Mathematical calculations will be a vital component in this program and so excellent math skills will be advantageous to students. The course consists of the following topics: Reaction Rates, Chemical Equilibrium, Solubility Equilibrium, Acids and Bases, Oxidation and Reduction Reactions and Electrochemistry.

Chemistry 40S Advanced

Recommended Prerequisite: Chemistry 30S Advanced

This course is designed to continue to expose students to topics in Chemistry including organic chemistry, reaction rates, chemical equilibrium, acids and bases and electrochemistry.

Students interested in taking 42AP Chemistry are encouraged to register for this course.

42AP Chemistry

AP Chemistry is an introductory university level chemistry course. Students cultivate their understanding of chemistry through inquiry-based lab investigations as they explore the four Big Ideas: scale, proportion, and quantity; structure and properties of substances; transformations; and energy. Students explore contect such as atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics and equilibrium.

Physics 30S

Recommended Prerequisite: Science 20F

This is the first of two courses in the Regular Physics Program. This course will develop a student's skills in collecting experimental data and representing that data in graphical and algebraic forms. The major areas of study are measurement, graphical analysis, vectors, linear motion, Newton's Laws, waves, sound & light. Mathematical calculations will be a vital component in this program. Excellent math skills will be advantageous to students.

Physics 30S Advanced

Physics combines math with an inquiring mind to analyze physical phenomena. Students will procure an understanding of basic physical concepts while developing their problem-solving skills. Major areas of focus include graphical analysis, equation development, trigonometry, vectors, waves, and sound.

Students interested in taking 42AP Physics are encouraged to register for this course in their Grade 11 year.

Physics 40S

Recommended Prerequisite: Physics 30S

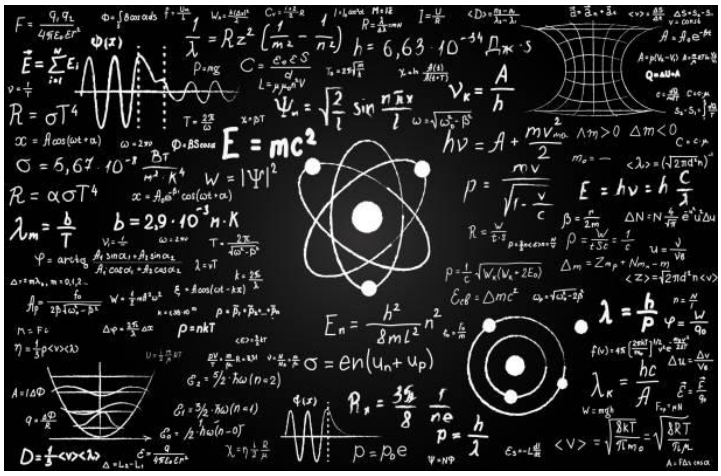
This is the second course in the regular Physics program. This course will develop a student's skills in collecting experimental data and representing that data in graphical and algebraic forms.

The major areas of study are mechanics in two dimensions, momentum, energy, projectile motion, circular motion, static electricity, electric circuits, and electromagnetism.

Mathematical calculations will be a vital component in this program. Excellent math skills will be advantageous to students.

42AP Physics 1

AP Physics 1 is an algebra-based, introductory university level physics course. Students cultivate their understanding of physics through inquiry-based explorations as they explore these topics: kinematics, dynamics, circular motion and gravitation, energy, momentum, simple harmonic motions, torque and rotational motion, electric charge and electric force, DC circuits, and mechanical waves and sound. Students build understanding through classroom study, in-class activity, and hands-on, inquiry-based laboratory work as they explore these concepts.



SOCIAL STUDIES

OVERVIEW

- Social Studies is the study of people in relation to each other and to the world in which they live.
- Social Studies helps students acquire the skills, knowledge, and values necessary to become active democratic citizens and contributing members of their communities, locally, nationally, and globally.
- At Murdoch MacKay Collegiate students are invited to become involved, thoughtful, critical, and reflective citizens via compulsory and optional course opportunities through a variety of means. Rigorous course material, workshops, guest speakers and field trips, challenge students to engage and interact in their community and world around them.

Canada in the Contemporary World 10F

This course is compulsory for all Grade 9 students. Lessons will engage students in the continuing debate concerning citizenship and identity in Canada and the world. Opportunities will be provided for students to acquire the skills, knowledge and values required to make informed and ethical choices when faced with the challenges of living in a pluralistic democratic society.

Geographic Issues of the 21st Century 20F

Recommended Prerequisite: Canada in the Contemporary World 10F

This course is a compulsory Grade 10 course that uses a thematic approach to studying the physical and human aspects of North America's geography. Students study concepts related to geographic skills such as mapping, geographic literacy, natural resource development, production and distribution of food, development of industry and trade, as well as urbanization. Students use the methods and tools of geography to examine issues of the sustainability of the continent's resources.

History of Canada 30F

Recommended Prerequisite: Geographic Issues of the 21st Century 20F

This course is a compulsory Grade 11 credit. Students will explore a broad timeline of understandings of the concept of Canada as a nation starting with Canada's First Peoples; to the arrival of Europeans; to the founding of a nation in 1867; and finally to its growth politically, economically, and socially up to the 21st century. Students will examine Canadian history through the lens of historical thinking methods (using primary source evidence, identifying cause and consequence, examining ethical dimensions of history, discovering continuity and change, historical perspective and significance) to help discover Canada's history.

SOCIAL STUDIES

History of Canada 30F Advanced

This course follows the 30F curriculum but involves a more rigorous academic approach with greater emphasis on reading, research, analysis and writing skills, as well as an added focus of Canada's link to Europe. Students enrolled in this course can expect to complete additional readings outside of class time.

Global Issues Citizenship & Sustainability 40S

Recommended Prerequisite: History of Canada 30F

Students in this optional course will conduct inquiry into the social, political, environmental, and economic impact of contemporary and emerging global issues. Through individual inquiry, students focus on questions relating to quality of life locally, nationally and globally via active democratic citizenship, critical media literacy, and ethical decision-making, Topics include, but are not limited to: human rights, terrorism, foreign relations, poverty and power, and the environment. There is no exam but a key component of the course is the planning and implementation of a community based action-researched project. It is strongly recommended that students registering for this course have a genuine interest in world events, sustainability and making a difference in the world.

SOCIAL STUDIES

Current Topics in First Nations, Metis & Inuit Studies 40S

Recommended Prerequisite: History of Canada 30F

This optional course supports the empowerment of students through the exploration of the histories, traditions, cultures, worldviews, and contemporary issues of Indigenous peoples in Canada and worldwide. Students gain knowledge and develop the values, as well as the critical thinking, communication, analytical, and inquiry skills, that will enable them to better understand past and present realities of Indigenous peoples. Additionally, exploration of topics such as self-determination, self-government, and language and cultural reclamation allows students to understand and work towards the post-colonial future envisioned by Indigenous peoples.

Law 40S

Due to our very unique history and patterns of settlement, our country has a legal system all its own.

The primary goal of this course is for students to learn the basic laws and workings of that system, for two main reasons:

1) So that living within our nation's borders is as secure and comfortable an experience as possible.

2) Canada's legal system is ever changing, as our society's values and perceptions change. The people of Canada not only make the laws of the land, but change them too. Therefore, in order to ensure the continued quality of life that our legal system provides us, we as Canadians should have a good sound grasp of that system for times when change is called for.

Main Areas of Study:

- History of Law
- Charter of Rights and Freedoms
- Criminal Law
- Civil Law
- Family Law

Canadian Law will be discussed, debated and analyzed. Students will learn by reading, completing case studies, role-plays, field trips, group and individual projects. Students will apply their knowledge by developing and showcasing a Mock Criminal Trial or a Mock Civil Trial.

ART

OVERVIEW

This studio-based program centers on exploring a wide variety of media; from painting and drawing to sculpture and technology. The goal of the visual arts program is to develop and refine ways in which students are able to communicate their thoughts and ideas visually. There is a dual focus on the development of technical ability and conceptual skills, allowing students to move towards expressing and interpreting both their own artwork as well as the artwork of others across various times, places, and cultures. This program provides students with a unique opportunity to explore and develop personal artistic expressions and a heightened response to their visual environment.

Art 10S

This is a studio-based program centered on painting, drawing, design and sculpture. Students will be given the opportunity to experiment with a variety of techniques and materials. This course is not a requirement for the Grade 10 program.

Art 20S

The Art 20S course will investigate a variety of themes and topics that will be explored using both traditional and non-traditional art media. Students will work in sketchbooks throughout the course to develop their own technical skills and visual interests. Major projects will become increasingly self-directed as students develop an ability to self-assess their own artwork. Students will be evaluated on their capacity to develop ideas, create finished artwork and communicate those ideas as well as interpret the visual world around them.

Art 30S

Recommended Prerequisite: Art 20S

Art 30S will build on the Art 20S program. Both themes and art materials will be presented as ways to engage in visual problem solving. Sketchbook work will continue to be encouraged as a place to record ideas and explore new techniques that can be used in larger art projects. Class discussions and critiques will help students develop their work. Students will be evaluated on idea development, visual communication and a capacity to assess their own work.

Art 40S

Recommended Prerequisite: Art 30S

Art 40S will continue to offer a variety of opportunities for students to refine technical skills and develop personal themes and interests in major art projects. Independent decision making in relation to choice of art media and self-expression are expected. Discussion will provide opportunities to examine the historical and cultural contexts of art, as well as an ability to analyze their own work. Students will be evaluated on idea development, visual communication and a capacity to assess their own artwork.

MUSIC

OVERVIEW

Music is fundamental to the human experience. We offer several opportunities to be involved in creating exceptional music. Whether you simply want to be a part of a solid music group or are interested in pursuing a career in music, these courses are designed to help you succeed.

Band 10S, 20S, 30S, 40S

Band is a performance-based class. The focus of this group is on development of basic instrumental technique, creative expression, music literacy, and the performance of quality music for Wind Band. Several performance opportunities are offered.

Choir 10S, 20S, 30S, 40S

Murdoch MacKay's Choir is an invitation to sing with others! It is a uniquely satisfying experience to be able to sing in the company of others who enjoy singing. We provide students an opportunity to develop confidence in their own voice, skills in singing, and music literacy. Students learn and perform a wide variety of music of different cultures and time periods and have many opportunities to perform throughout the year.

Jazz Band 10S, 20S, 30S, 40S

Jazz Band is a high-level performance ensemble that focuses on the study of jazz music. The study of quality music, improvisation, creative expression, jazz style, as well as exploring the characteristic sounds and stories of famous bands (Duke Ellington, Count Basie, and others), are main focuses for the ensemble.

Music Production 10S, 20S, 30S, 40S

This course is designed to put the tools in your hands and give you the experience to produce your own music. Music Production is the process of creating, developing, and refining recorded music for public presentation – from composition to recording, mixings, mastering, and finally distributing the music. Focus will be given to developing an understanding of the roles of different musical variables, and to learning skills with production tech and recording equipment.

Guitar 10S

Our entry-level guitar course is designed for beginners to the guitar. Students will be introduced to the fingerboard, basic chord shapes, and learn correct hand technique. Lead and rhythm guitar skills will be developed. As this will be a semestered course, students will play every day. Guitars will be provided for use in class. Students may play in small ensembles, individually, or together as a class, depending on interest.

Guitar 20S, 30S, 40S

This course is designed to be a continuation of the previous course, with an emphasis on creativity and group performance. Students will perform popular, classical and new music, and will begin to learn to write and arrange music for guitars. Guitar ensemble playing can be one of the most satisfying musical endeavors and will lead to an advanced knowledge of the fingerboard and several key techniques used in lead guitar playing, as well as a much better understanding of conventional music notation.

PSYCHOLOGY

Psychology 40S

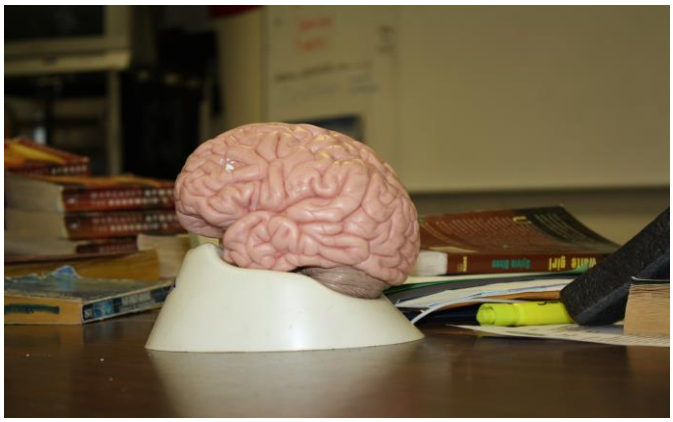
Have you ever wondered what makes us do the things we do?

What causes us to eat, to love, to learn, to sleep and perchance to dream? This course is an introductory look into the study of human behaviour. During class discussions, lectures and experiential learning, students will be exposed to psychological theories of personality, emotion, mental disorders and their various treatment strategies. Students will be asked to work with various print materials, the Internet and each other to better understand themselves and others in the world around them. Through co-operative learning, class presentations and the occasional guest speaker, students explore the theories, theorists and careers in the exciting science of psychology.

42AP Psychology

Recommended Prerequisite: Psychology 40S

AP Psychology is an introductory university level psychology course. Students cultivate their understanding of the systematic and scientific study of human behavior and mental processes through inquiry-based investigations as they explore concepts like the biological bases of behavior, sensation and perception, learning and cognition, motivation, developmental psychology, testing and individual differences, treatment of abnormal behavior and social psychology. Throughout the course, students employ psychological research methods, including ethical considerations, as they use the scientific method, evaluate claims and evidence, and effectively communicate ideas.



TECHNOLOGY

Digital Pictures & Digital Film Making 25S

Digital Pictures introduces students to the basic techniques of digital photography and image editing. The students will learn to control and take pictures with digital cameras, edit their images with Photoshop and create multimedia presentations using a variety of applications.

Digital Film Making will provide students with the skills and knowledge needed to tell stories by recording video, editing, combining sound, adding text, and making use of their digital imagery techniques as they produce and create their projects.

*Students will receive ½ credit in both Digital Pictures 25S and Digital Film Making 25S

Interactive Websites & Interactive Media 35S

Who needs a website? Small business owners, large corporations, independent bloggers, teachers, chefs, carpenters…the list is endless! They also need your coding and design skills to make their websites a reality. If you have an interest in learning how to create a website from scratch (not through templates), where you have control over content and design, this course is for you. Using the markup language of HTML, you will have the opportunity to create several interactive websites through hands-on challenges designed to progressively advance your coding skills. Using the Adobe software suite, you will learn the basics of image creation/editing in Photoshop, animation creation/editing in Animate, and using Filmora you will create/edit basic videos. You will then code these interactive features into your website. A final project will be created by you to demonstrate your cumulative learning and showcase your design/creative skills.

*Students will receive ½ credit in both Interactive Websites 35S and Interactive Media 35S

Computer Science 20S

Computer Science involves computer languages and coding,and offers a unique perspective on how our technologically-advanced world operates. This introductory computer science course is where you will learn to develop simple animations, games and professional applications. Topics will be explored using various approaches including Sphero robots, micro:bit programmable computers, MIT's Scratch and Microsoft's Visual Studios software. If you enjoy solving problems and using logic, and are interested in developing programming skills that are in high demand in the workforce, this course is for you!

Computer Science 30S

Programming a computer to do what you want is actually quite easy, you just have to know how to talk its language. Just like humans use many languages, so do computers. In this course you will focus on learning Java, the most widely used computer language. The teaching methods used will allow you to learn a new programming idea, code an example with assistance, and then create your own application using NetBeans. You will also use other fun devices to explore and unleash your creativity! If you are a conceptual thinker who is interested in developing skills to program technology, not just use it, this course is for you!

Computer Science 40S

Are you fascinated by the Internet of things and how smart our cities are becoming? If so, it's time for you to get behind the ideas and learn how to program the technologies that are advancing our society. In this course you will explore intermediate computer science concepts using Java, the most popular computer language, and begin to combine code and graphics. For your final project you will create a custom game coded from scratch. If you are seriously interested in developing employable skills, keen on hobby programming, or motivated to code for a living, this course is for you!

CAREER DEVELOPMENT

OVERVIEW

Career development life/work courses and career education credits offer learning experiences to help students plan and embark on their career development journey. These learning experiences help students increase their self-awareness, gain exposure to experiential career learning, develop essential personal skills and employability skills, acquire knowledge of labour market opportunities, learn about workplace health and safety practices and deepen their understanding of the relevance of education and academic skills development and engagement.

Life/Work Building 30S

Do you want to find an exciting career? Life/Work Buiilding will help you to do just that! It is designed to connect school learning with the workplace. With career information and experience, students will acquire enhanced self-confidence, motivation, self-knowledge, as well as a greater sense of direction and responsibility. Overall, **Life/Work Building** is a practical plan for their future.

Topics covered include:

*Personal Management
*Career Exploration
*Learning and Planning
*Job Seeking and Job Maintenance
*Career and Community Experiences
*ePortfolio

At the end of the course, students will present their completed portfolio to a business professional in an interview setting.

Life/Work Transition 40S
Career Development Internship 40G

**Students MUST register for both credits.

The courses provide students with the opportunity to learn about and prepare for the transition from high school to post-secondary education (university/college/apprenticeship) and/or employment.

The Five Main Themes Include:

*Personal Management
*Career Exploration
*Learning and Planning
*Job Seeking and Job Maintenance
*Work Experience in the Community

Students enrolled in these classes will spend **up to 80 hours/credit** in the community at a workstation of their choice. Community work experiences provide students with the opportunity and challenge to gain new skills, self-confidence and self-knowledge about what career path may be best suited to them at this time.

Credit for Employment (CFE) 30G/40G *

Credit for Employment will allow students to earn up to two high school credits for paid work experience – 110 hours of paid work experience = 1 credit

Purpose:

CFE allows students to implement career development principles such as essential employability skills into the authentic context of work. Through employment, students will have the opportunity to apply & refine the knowledge and skills acquired in the Career Development Life/Work courses.

CFE will provide students with valuable workplace experience that will contribute to their career life planning.

***Eligibility:**

Previously completed or enrolled in a Life/Work/Career Development course <u>prior to</u> registering for CFE AND prior to accumulating hours towards CFE.

Students must be a minimum of 16 years of age and/or in Grade 11 or 12. Students are responsible for finding their own paid work experience.

Employers must be willing to complete the paperwork required to register the student for CFE and validate student hours. Employment must be a true employer/employee relationship where Workers Compensation Coverage is provided. Students, along with parents/guardians assume the responsibility for their own safety while completing the paid work experience. Together, with the employer, students must keep records of his/her hours using the proper CFE forms provided by the school. **NOTE:** Students will NOT register for this credit at registration. Paid work experience must occur outside of their normal school timetable.

DRAMA

OVERVIEW

Drama provides an opportunity to gain confidence and skill in presenting to a public audience while allowing students to be creative in developing characters for the stage. Students learn how Drama impacts audiences and develops teamwork in preparing for Drama productions.

Drama 10S

This course is an introduction to basic drama skills. Students will learn & develop skills in pantomime, creative movement, expression, improvisation, and character development. Basic Stage movement & terminology will be learned, while students begin to develop acting skills mainly without script. Major goals are to develop self-confidence, work co-operatively and creatively with others.

Drama 20S

Recommended Prerequisite: Drama 10S
The main focus of this second Drama credit is on the individual, often working in small groups. A general study of the History of Theatre will allow students to explore scripts of various periods. Activities include both short and longer scenes, in groups as well as solo performances. Team building and improvisation skills will be developed further and may include mime, speech, stage fighting, script development, and the use of props, stage focus and enhancement and further development of other beginning Drama skills. Major goals include increasing self-confidence and quick thinking, and finding imaginative creativity, as well as gain a general understanding of the History of Theatre. Regular attendance and full participation are essential.

Drama 30S

Recommended Prerequisite: Drama 20S
It is recommended students complete Drama 20S before taking this course or an equivalent (Musical Theatre, MTYP, Prairie Theatre Exchange School). Acceptance is at the discretion of the instructor. This second of the curriculum-based drama programs explores script interpretation using the words of playwrights. Finding meaning as well as action in the words of others is a challenge, as is the memory work required to do it effectively. A presentation to a public audience will be prepared, allowing students to develop acting and production skills. Rehearsal and memorization comprise a large portion of this course. Regular attendance and willingness to work as a team are essential.

Drama 40S

Recommended Prerequisite: Drama 20S or 30S, or equivalent
Students must complete Drama 20S or 30S or equivalent (MTYP, Prairie Theatre Exchange School). Acceptance is at the discretion of the instructor. Drama 40S is a production course of a full-length play to a paying audience. In addition to interpretation of a character within this play, students will be expected to take responsibility for a technical aspect of the production (sets, props, costumes, makeup, publicity, stage management, direction, production management, etc.) The work is made up of memorization, direction and rehearsal, followed by more rehearsal. After school and/or noon hour rehearsals are to be expected and will be mandatory. Regular attendance, acceptance of responsibility, contribution to a team effort, and a genuine desire to perform are most necessary for success and obtaining credit in this course.

FRENCH: COMMUNICATION AND CULTURE

OVERVIEW

The general goal of French: Communication and Culture is that students are able to go out in the world and communicate in French in real and meaningful ways. From Grades 9 to 12, students engage in opportunities for communication such as introducing themselves, describing personal preferences, an object or a person, expressing a feeling or an opinion, and talking about the future.

The General Learning Outcomes of French: Communication and Culture are to listen in order to understand the communicated message; to communicate orally and interact spontaneously, keeping in mind the message, fluency and accuracy; to read a variety of texts, for various purposes, and demonstrate understanding of text, orally, in writing or visually; to plan and write coherent texts to communicate the message; to demonstrate and apply a general knowledge of both francophone cultures and the advantages of learning French.

French 10F

Recommended Prerequisite: Gr 8 French: Communication and Culture or teacher permission.

The French: Communication and Culture 10F course aims to continue to build skills learned in grade 8 general outcomes. Vocabulary and structures are introduced in a thematic approach based on the students' background and experiences. Topics to be covered may include: fashion/clothing/personal appearance, nationalities and countries, advertisements and slogans, sustainable development, French Canadian culture, family, travel and adventure through the use of movies, technology, games, skits, hands-on activities and writing.

French 20F

Recommended Prerequisite: French10F: Communication and Culture or teacher permission.

The French: Communication and Culture 20F course aims to continue to build skills learned in grade 9 general outcomes. Vocabulary and structures are introduced more intensively in a thematic approach based on the students' background and experiences through the use of movies, technology, games, skits, hands-on activities and writing. Topics may include: Physical activity, pastimes, nutrition, friendship, arts and media, and careers.

French 30S

Recommended Prerequisite: French 20F: Communication and Culture or teacher permission.

The French: Communication and Culture 30S course aims to continue to build skills learned in grade 10 general outcomes. Vocabulary and structures are introduced more intensively in a thematic approach based on the students' background and experiences through the use of movies, technology, games, skits, hands-on activities and writing. Topics may include the Arts, the young adult, and crime and violence.

French 40S

Recommended Prerequisite: French 30S: Communication and Culture or teacher permission.

The French: Communication and Culture 40S course aims to continue to build skills learned in grade 11 outcomes. Vocabulary and structures are introduced intensively in a thematic approach based on the students' background and experiences through the use of movies, technology, games, skits, hands-on activities and writing. Topics may include the young adult, media and technology, the francophone world, travelling in francophone countries, and the world of work.

HUMAN ECOLOGY

OVERVIEW

Learn about human development, psychology of human behaviour, effective communication skills and increase your earning potential. Evaluation is based on class work, hands-on learning activities, quizzes/tests, a potential practicum component, and a final project.

Family Studies 10S

This course emphasizes the understanding of oneself. It allows the student to acquire knowledge and skills through practice and experimental learning that are integrated into authentic work. This course will focus on the understanding of decision-making and conflict-resolution skills that students need for success in relationships, families, people-oriented careers, and their daily lives. An important focus will be on the student's transition to the Senior Years and allowing the student to apply knowledge gained to their developing maturity. Evaluation is based on class work, journals, and a final project.

Family Studies 20S

This course focuses on the skills and knowledge parents and caregivers need, with emphasis on maternal health, pregnancy, birth, and the early years of human development. Students will learn about the developmental needs, effective care, and guidance of young children. The development of these skills and knowledge will enhance their overall well-being now as adolescents and in the future as parents and caregivers. Students will take home the electronic baby and participate in many other activity-based lessons. Students will learn from readings, case studies, group activities, and journaling, as well as small oral and written projects. This course may offer a practicum component. Evaluation is based on class work, quizzes, tests, projects, and a practicum placement setting.

Family Studies 30S

This course focuses on children's and adolescent's relationships within their families. Students will learn about developmental needs, effective care, and positive interactions with children/adolescents. The skills and knowledge that students gain will provide them with the opportunity to make informed decisions related to parenting, relationships, families or even future careers. This course offers a practicum component that requires students to work with children ages 4-11 in a school setting. Evaluation is based on class work, quizzes/tests, hands-on projects, practicum, and a final project.

Family Studies 40S

This course focuses on the student's relationships with others. Loving relationships and family relationships are studied, as well as how to balance family and work. It emphasizes the transition from adolescence to adulthood with the ability to examine and practice skills that help develop healthy interpersonal relationships. The skills and knowledge will provide the opportunity for students to make informed and responsible life management choices now and in the future. Evaluation is based on personal reflections, class discussions, class work, hands-on projects, potential practicum placement and a final inquiry project.

HUMAN ECOLOGY

OVERVIEW

Divided among four courses, students will be provided with opportunities that explore their relationships with food in both a theoretical and practical manner that can enhance one's health and wellbeing. This course will provide knowledge and skills that are relevant to student's lives as well as lifelong applications. The goal of these courses is to provide students with the knowledge and skills to become informed consumers, responsible citizens and to create a better understanding and relationship with food.

Food and Nutrition 10S

This is an introductory course for students who may or may not have any previous Foods experience. Food and Nutrition 10S is the study of the choices people make every day as they relate to food. Students learn how food affects their health, appearance, and energy. Choices made in the marketplace and in restaurants are analyzed. The practical part of the course includes preparing a variety of dishes.

Food and Nutrition 20S

Recommended Prerequisite: Food and Nutrition 10S

Food and Nutrition 20S is comprised of theory classes and food labs, which are taught simultaneously. Theory classes include an in depth study of the six basic nutrients in food and the digestion of these nutrients in the body. Consumer skills, shopping behaviors, food marketing practices and reading food labels are also examined. Food labs allow the student to practice safe preparation skills and techniques and proper sanitation.

Food and Nutrition 30S

Recommended Prerequisite: Food and Nutrition 20S

Food and Nutrition 30S builds on skills learned in 20S. Social, cultural, and personal influences on food choices are discussed. The significance of food to health and lifestyle, consumer skills, and changing food needs are studied. Trends in the food industry in Canada and their effect on the consumer are identified. Cultural influences of food will also be explored. The practical part of the class emphasizes meal planning, time and money management, and creativity.

Food and Nutrition 40S

Recommended Prerequisite: Food and Nutrition 20S or 30S

This in-depth Food and Nutrition course emphasizes independent and group work. Food trends and how they influence the individual and families are studied. World food issues and careers related to food are also explored. The cultural influences of food are reflected in the practical part of the course. Advanced preparation skills are used to prepare gourmet meals. An emphasis on time and money management and student planning are part of the practical work.

ELECTRONICS TECHNOLOGY

OVERVIEW

These courses introduce students to the fields of electronics and technology and to the career opportunities within these industries. The major focus is "hands-on" project work where students develop problem-solving, design skills, and gain valuable experience utilizing a variety of electronic tools and computers. It is especially beneficial to those students who are interested in pursuing a career in engineering, science, telecommunications, architecture, mechanics or construction.

Electronics Technology 10G

This is a fun, exciting and informative program that deals with introductory electronics and teaches students the basics of electronic theory. It focuses on circuit board development, Ohm's Law, solar power and other sustainable forms of energy. Students will also be introduced to technologies such as 3D printers and Lasers. We will explore careers and possible projects such as the decision maker, robotic blinker, alarm system as well as design and race an electric car.

Electronics Technology 30G

Here the focus will be on Digital and Computer Component Fundamentals. This course is about exploring computer technology through the study of digital electronics. Students will explore how circuits and components work and have the opportunity to troubleshoot and problem solve and apply theory to practical situations. Students will also be introduced to technologies such as 3D printers, Micro bits, Arduinos and Lasers. There will be an emphasis on Ohm's Law where it applies to real life situations and prepare for Trades, College or Engineering programs.

Electronics Technology 20G

Students learn the basics of electricity and fundamentals of electronics and technology. Here we will explore building circuits using breadboards and learn about applied theory and learn to troubleshoot components and problem solve. We will use our theoretical and practical skills to navigate Robotics using micro bit and Arduino technology. Students will have the opportunities to build and design projects such as alarm systems, electric cars, windmills as well as begin to learn about the fundamentals of AC/DC. Students will also be introduced to technologies such as 3D printers and Lasers and be able to explore career opportunities in engineering and the trades as well.

Electronics Technology 40S

Recommended Prerequisite: Electronics Technology 20G or 30G

The focus for this course will be Advanced Electronics and Technology. The course reviews electronic theory and technology fundamentals and then expands the student's knowledge and skills in these fields through theory and project work tailored to meet their individual interests. Here we will explore careers and post secondary opportunities and cover topics such as robotics, circuitry and other real life applications.

GRAPHIC ARTS

OVERVIEW

Graphic Arts is a hands-on course. Students use Apple iMacs, creative software and current technology to visually express personal interests, ideas, concepts and information. This spans all forms of print, web, mobile, animation, 3D, photography and video production.

Projects include layout/designs using Photoshop & Illustrator, short videos, animations, motion graphics, custom apparel, banners, stickers, signs, posters, 3D printing, digital printing, custom mugs, phone cases, laser engraving, and so much more.

Graphic Technology 10G

Topics of study include:

- Design, Layout
- Introduction to Adobe Photoshop
- Sign Production processes
- Screen printing
- Black and White Photography
- Digital Photography
- Desktop Publishing
- Portfolio Assignment

Graphic Technology 20G

Students will be introduced to a wide variety of production methods using graphic arts software and techniques. Topics of study include:

- Design, Layout and Illustration
- Introduction to Adobe Photoshop
- Sign Production to make personal decals
- Screen printed shirts - single colour
- Black and White Photography
- Animation basics
- Video Editing and Production

GRAPHIC ARTS

Graphic Technology 30G

Additional software and production methods will be introduced that build on the existing skill sets that students have acquired in Grade 10. While there is not a prerequisite, preference for admission will be given to those students who have completed a previous level of Graphic Arts.

- Design, Layout and Typography
- Advanced Adobe Photoshop, Adobe Illustrator
- Sign Production to full colour decals and banners
- Screen printed shirts - multi colour
- Printing press
- Digital Photography and image manipulation
- Animation basics
- Video Editing and Production

Graphic Technology 40S

Additional software and production methods will be introduced that build on the existing skill sets that have been acquired in Grade 10 or 11.

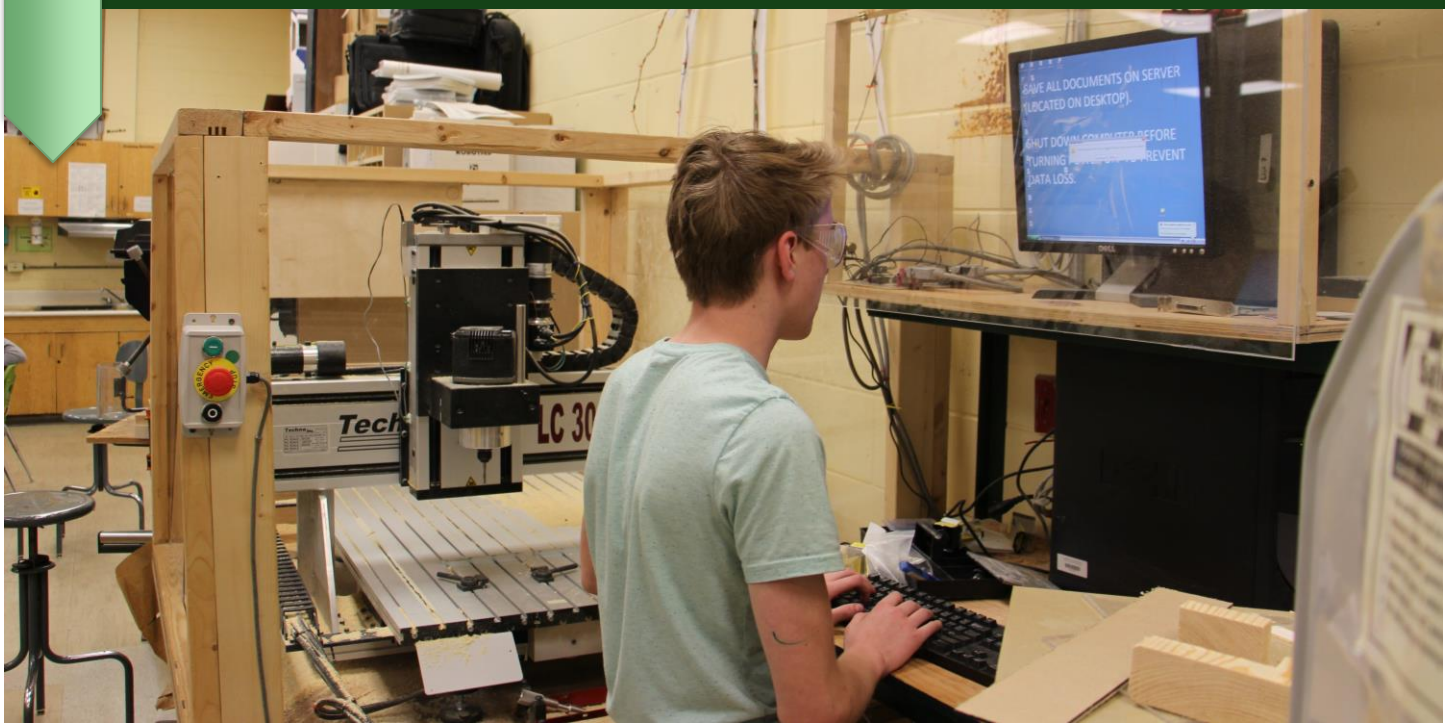
- Principles and elements of design
- Integrating Adobe Photoshop, InDesign, Illustrator
- Wide Format digital printing to create signs, banners, prints and posters
- Screen printing – multi-colour computer generated artwork
- Lithography – offset printing press operation
- Animation and introduction to game creation using Adobe Flash
- Digital SLR Photography
- 3D Printing
- Laser Cutting & Engraving

Multimedia 40S

Students will learn the fundamentals of 2D animation, 3D modeling/printing, photography, videography and motion graphics.

Students combine skills and knowledge from these areas to create a variety of unique projects to maximize student interest, creativity and engagement.

DRAFTING DESIGN TECHNOLOGY



OVERVIEW

Pre-engineering is a dynamic and innovative specialized program which provides students with a practical hands-on experience in an interactive state-of-the-art lab environment complimented with virtual online simulations. Students will work with robotic, pneumatic, electrical, wind, solar, automated and other green technologies to apply knowledge and skills to solve authentic engineering problems in various fields of engineering. The Pre-Engineering program here at Murdoch MacKay is an activities oriented program designed to challenge and engage the natural curiosity and imagination of students.

Drafting Design Technology 10G

This course will be offered primarily to create an awareness towards this discipline. Many students do not really know the scope of engineering itself, much less what the difference is between a civil or mechanical engineer. This awareness is not only to teach about the different types of engineering, but also steps to become an engineer. A key component to this process is the focus on the development of critical thinking skills required in the engineering field itself. Students will model and create prototypes such as spaghetti bridge design, solar or wind propelled vehicles and wind turbines.

Drafting Design Technology 20G

This course focuses on design, representation and specifications for a variety of geometrical shapes and drawing types.
The student will learn basic design and drafting skills as related to producing graphic representations of objects and applying basic mathematical concepts to produce accurate drawings quickly and efficiently. This course will be of benefit to students interested in pursuing careers in Engineering, Architecture, Interior Design, or in technology programs at the community college level.

DRAFTING DESIGN TECHNOLOGY

Drafting Design Technology 30S

Pre-Engineering and Design Technology is a program which prepares students for engineering fields or the direct job market. Students could leave the program and enter the job market as a CAD/CAM designer, or pursue university studies in many fields. It concentrates on developing a career in computer-aided drawing and manufacturing product design. 3D modeling software as well as 2D parts manufacturing will be the software focus. Students will develop teams to participate in design challenges, where they will have the opportunity to see their prototypes built. Students will have the opportunity to complete real engineering projects simulating real world experiences.

Drafting Design Technology 40S

Pre-Engineering and Design Technology helps to prepare students for multiple career fields such as Engineering, Architecture and Interior Design. The program can also lead to experience with rapid prototyping, robotics, modeling, electronics and CNC programming. 3D modeling software as well as 2D and 3D manufacturing will be supported. Project work will be individualized based on specific student interest. This program is meant to build on skills developed in Drafting Design Technology 30S.

The goal will be to have students design, build and test their models and projects through the direct application of technology.

WOODWORKING

OVERVIEW

- A major focus is "hands-on" project work where students develop problem-solving and practical skills.
- Opportunity to learn by constructing a variety of exciting practical projects.
- Students will develop useful skills through the use of various types of tools and machinery with safety being stressed at all levels.

Woodworking 10G

Grade 9 Woodworking is an excellent hands-on course that affords students the opportunity to design and construct projects. Using safe practice, the students will enhance their skills in the use of modern tools and machines. The study of material and processes will help you understand both industrial and environmental concerns. Topics covered will help reinforce student knowledge in other subjects such as Math, Science and Social Studies. This is a fun approach to learning that will not only help the student feel pride, but help raise self-esteem.

Woodworking 20G

Students will further explore the world of Woodworking Technology with more emphasis placed on the "Hands on Experience". More challenges and advanced projects and problems are presented. Students will start designing many projects on their own.

Topics covered:

*Planning and Design
*Decision Making
*Safety
*Career Development
*Power Tool Operation
* Computer Aided Drafting
*Wood Joints and Fasteners

WOODWORKING

Woodworking 30G

Students will be required to develop and build their project ideas. Precise measurement and advanced use of layout tools (Square, T-bevel) will be emphasized.

Topics and practical work in this area includes:

*Case and Frame Construction
*Raised Panel Doors
*Table and Chair Construction
* Furniture Styles
*Advanced Wood Science
*Intarsia

Woodworking 40S

Students will be expected to complete high quality projects and master the use of hand and power tools to complete the job. Similar topics as the other Woodworking courses will be studied, but at a much more advanced level. The emphasis is "Learning by Doing". Building and house construction will be added to the topic list. Students will master terms which are used on the job sites of today in Canada. Wood materials and composites are studied in great depth. Excellent for the student entering Red River Community College for building construction, carpentry or the Engineering/Architecture student, but also a fun, general interest course for those looking to build a nice piece of furniture for when they move out on their own!

Solid Body Electric Guitar Building 40S

The aim of this course is to create a fully functional, solid body electric guitar. In this multidisciplinary course, students will use drafting and design, woodworking, CAD/CAM manufacturing, electronics and graphic design elements to complete their guitars. Students will play a key role in both their exploration of learning as well as their evidence of learning. Students will be able to select unique construction materials and methods throughout the build process. Students will then choose how best to show evidence of their learning to their instructor(s). Students and instructors will work together in the process to create a truly unique piece of hardware showcasing learning from multiple subject areas. Guitar history, sound engineering, and passive electronic theory will also be studied. There is no prerequisite or prior knowledge of guitars or guitar building required to take this course. Students interested should make note that this is a 40S level course and will be taught accordingly.

Topics of study include:

Woodworking: Material selection & Theory: Safety: Machining

CAD/CAM Manufacturing: Computer Drafting and modelling: 3D rendering: CNC milling

Electronics: Electrical component theory & testing (potentiometers, capacitors, magnetic coils): Passive electronic systems: soldering

Graphic Design: UV printing: Laser engraving: hydro dipping: CNC engraving: pyrography

TECHNICAL EDUCATION PROGRAMS

OVERVIEW

We offer four Technical Education programs which provide students with job skills that can be used for:

- Employment opportunities upon graduation
- Apprenticeship programs
- Entry into College and University Programs

AUTOMOTIVE TECHNOLOGY

Level 1 Accredited

Students work with tools and equipment to service, diagnose and repair all types of vehicles. Areas of study include: engine fundamentals, fuel systems, drive trains, climate controls including air conditioning and electrical systems.

CARPENTRY

Level 1 Accredited

Students work with tools and equipment to learn skills related to the carpentry trade. Areas include: hand tools, portable power tools, stationary equipment, surveying, foundations, stairs, cabinets, masonry, interior/exterior finishing, furniture construction, and CAD (computer aided drawing).

FASHION TECHNOLOGY

Students study all facets of the fashion industry. Areas include: basic pattern design and production, fashion illustration, industrial sewing techniques, computer aided design and garment construction.

WELDING TECHNOLOGY

Level 1 Accredited

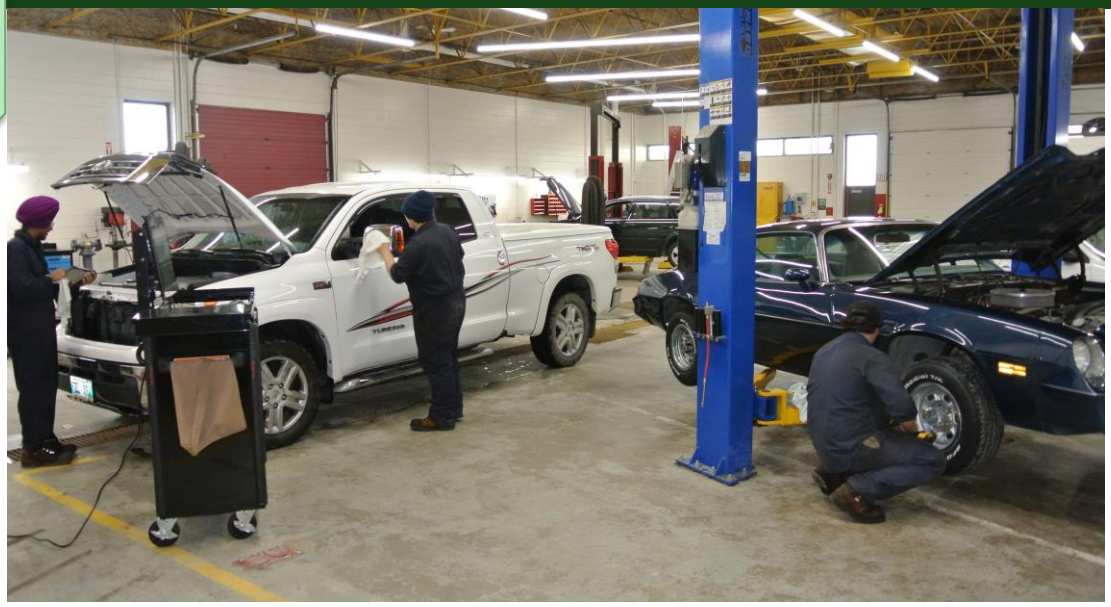
Students work with hand tools and equipment related to the Welding industry. Areas of study include: oxy-acetylene welding/cutting, hand tools, CNC Plasma Design, blueprint reading, Basic and Advanced GMAW, SMAW, GTAW.

METALS & AEROSPACE

Level 1 Accredited

Students work with hand tools and equipment related to the metal industries. Areas include: blueprint reading, hand tools, basic and advanced lathe, milling and grinding, and CNC machining (computer numeric control).

AUTOMOTIVE TECHNOLOGY



OVERVIEW

The Automotive Technology Program is accredited with Manitoba Apprenticeship and provides a foundation of skills and abilities for students to gain entry level employment. Students obtaining marks of 70% in each of the Grade 10-12 courses will have met accreditation standards. Students successful in completing all course credits will have the opportunity to work with an employer and may be signed up to receive Level 1 of Apprenticeship. Employment as an apprentice can provide a career path towards Red Seal Certification as an Automotive Technician. During the program, students will have the opportunity to repair customer automobiles, light trucks and specialty projects. Extracurricular activities and events throughout the school year include Skills Canada, ISCA World of Wheels Career Day and our June Car Show and Student Awards Night.

GRADE 9

Exploring Technical Education

Includes: Introduction to Automotive Technology 15S & Exploring Technical Vocational Education 15S

These are introductory courses intended for students wishing to sample both Automotive Technology and Metals. The emphasis is on hands-on activities. Students are introduced to safety, tools and equipment specific to each area, automotive systems and service procedures.

GRADE 10 2 Credits

Automotive Systems & Service 20S

A student wanting to develop skills in the automotive service and repair industry must have knowledge of the basic principles related to automotive systems and service. Students learn safety, tools and equipment, automotive systems and service procedures and are introduced to diagnosis strategies.

Chassis Fundamentals and Service 30S

Students will develop skills and knowledge of the basic principles of the vehicle chassis and its brake system. The student will be able to describe, diagnose and repair braking, steering, and suspension systems. The student will develop an understanding of the principles of wheel and steering alignment and be able to apply the principles to diagnose and align steering systems.

AUTOMOTIVE TECHNOLOGY

GRADE 11 3 Credits

Engine Fundamentals and Service 30S

Recommended Prerequisite: Grade 10 Automotive Courses (2 credits)
A student will develop skills and knowledge of the basic principles of the internal-combustion engine, the inner workings and relations of the engine components and how those relate to vehicle operation. The student will learn the procedures to service, repair and replace engines and their components.

Drive Train Fundamentals and Service 30S

Recommended Prerequisite: Grade 10 Auto

A student wanting to develop skills in the automotive industry must have knowledge of the basic principles of the vehicle drive train. The student will develop an understanding of the different drive train configurations and their components. The student will be able to diagnose and repair a variety of drive train components.

Vehicle Systems Part 1 40S

Recommended Prerequisite: Grade 10 Auto

A student will develop skills and knowledge of the operation of the automotive electronic and control systems. Students' knowledge in electrical systems will be further enhanced by learning about the principles of ignition, control and communications systems. The student will be able to diagnose, service and repair ignition, control, and communications systems.

GRADE 12 3 Credits

Vehicle Systems Part 2 40S

Recommended Prerequisite: Grade 11 Automotive Courses (3 credits)

Student will develop skills and knowledge of engine management and emission systems. The student will understand the principles of fuel supply, metering and vehicle emissions. The student will be able to use electronic diagnostic interface to diagnose, service and repair engine management and emission systems.

Applied Diagnostic Strategies 40S

Recommended Prerequisite: Grade 11 Auto

Students will learn to apply diagnostic strategies to a variety of vehicle systems and components. The students will demonstrate the ability to diagnose and correct customer concerns and to complete vehicle repairs to accepted industry standards.

Automotive Electrical Systems 40S

Recommended Prerequisite: Grade 11 Auto

A student wanting to develop skills in the automotive industry must have knowledge of the basic principles of automotive electrical systems. The student will understand the principles of electricity and electronics as it relates to automotive systems. The student will be able to diagnose, service and repair automotive electrical circuits and components.

CARPENTRY

OVERVIEW

The Carpentry program is designed to provide students with the necessary knowledge, tools, skills and work ethics to enter the carpentry trade and related occupations such as cabinet/furniture making, estimating and sales. Students will also gain sound knowledge, skills and safe work practices, utilizing common woodworking equipment. Students are required to demonstrate competence in the hands-on skills as well as pass the final exam to achieve credits in all Carpentry courses. Carpentry will also provide a foundation for post-secondary education in areas such as drafting, architecture, and engineering. Graduates will be well prepared to enter directly into the workforce in carpentry, surveying, drafting, civil engineering, architecture, interior design or any other related area, or further post-secondary training.
Students will construct sheds, including framing, siding and roofing. Other projects are saw horses, framing a window, stairs, concrete forms, and a model roof, to name a few. There is a design and drafting segment in the program. The emphasis is on attainment of a good work ethic and the attainment of industry level standards in basic carpentry skills. This is a challenging program that provides rewards in skills and personal satisfaction. **Required supplies are:** safety boots, safety glasses, tape measure, utility knife & carpenters pencil, as well as a damage deposit for the toolbox the program provides.

Grade 9

Introduction to Carpentry 15S

The first credit of the program is designed to provide the students with the fundamental tool skills and knowledge required for the construction industry. This course is recommended for students with an interest in construction.

Grade 10 2 Credits

Carpentry Fundamentals 20S
Carpentry Tools & Equipment 30S

Recommended Prerequisite: Intro Carpentry 15S
Students are provided with basic uses of portable and stationary power tools commonly used in the industry. Productivity & safety in the workplace are important factors that affect the student's marks. Students are required to do mandatory projects and a final exam.

CARPENTRY

Grade 11 3 Credits

Framing 30S
Interior/Exterior Finishing 30S
Surveying & Concrete 40S

Recommended Prerequisite: Carpentry Fundamentals 20S and Carpentry Tools & Equipment 30S

Students at the Grade 11 level will study the practices, principles, and building code standards related to the construction of the superstructure of a building, from surveying property and building lines to constructing the roof of the building. The students will be working under the same conditions encountered on a construction site.

Grade 12 3 Credits

Advanced Framing 40S
Carpentry Millwork 40S
Applied Carpentry 40S

Recommended Prerequisite: Framing 30S, Interior/Exterior Finishing 30S and Surveying & Concrete 40S

Grade 12 students will study the theory and techniques used to complete interior/exterior building finishes, cabinet/furniture construction as well as stair construction. The environment is as much a work place as possible to prepare students for the productivity required in the industry.

Consider the benefits:

1. **More Options** – proceed directly to employment opportunities or attend a university or community college.
2. **High Wages** – with prior training you may earn a higher wage at full or part-time jobs.
3. **Facilitate other areas of learning** – through mastery of skills and concepts learned.
4. **Entrepreneur** – can provide the training to start your own business.

FASHION TECHNOLOGY

OVERVIEW

This is a one of a kind program for students interested in the world of fashion. Students learn both the theoretical and practical sides of industrial sewing techniques, fashion illustration, pattern making and garment construction. Fashion is ideal for creative students or anyone interested in developing their creativity through a practical, hands-on approach. This program builds skills related to: competence of industry standards, commitment, communication, and problem solving.

Activities in the Fashion Design & Technology program:

* Guest Designers
* Backstage access at local fashion shows
* Modeling workshops
* Participation in photoshoots
* Walking in fashion shows

Basic sewing supplies, including scissors, pins, stitch rippers, garment bags are required.

FASHION TECHNOLOGY

Grade 9

Exploration of Fashion Design & Technology 10S

The purpose of this course is to explore fashion through experimentation with a variety of sewing and design techniques. Students are introduced to industrial sewing machinery throughout the lab and learn the basics of industrial pattern making standards. The final project will be a hoodie or a sweatshirt, in which they will incorporate design, pattern making and sewing construction techniques learned and practiced over the duration of the semester.

Grade 10 2 Credits

Introduction to Fashion Design & Technology 20S

The purpose of this course is to introduce students to a wide variety of sewing and design techniques applicable to fashion. Students will continue utilizing industrial sewing machinery and build their knowledge of pattern making techniques, studying a variety of fitting features through the exploration of skirts and shorts. The final project will be a skirt or shorts in which pattern making and sewing construction techniques learned over the duration of the semester will be utilized.

Knitwear Design & Construction 30S

Students take on the role of a fashion designer, creating a clothing line composed of a variety of garments, including t-shirts, tank tops, leggings, skirts and dresses. Students learn about fashion promotion through brand development and merchandising in order to further develop their clothing lines.

Grade 11 3 Credits

Pant Design & Construction 30S

The purpose of this course is to develop pattern making and sewing construction skills applied toward the design and completion of pants. Students will design and construct a pair of pants that may correspond with their knitwear clothing line and/or semi-formal attire.

Semi-Formal Wear Design & Construction 30S

The purpose of this course is to develop pattern making and sewing construction skills applied toward the design and completion of a semi-formal dress or shirt. Students will design and construct a semi-formal dress or shirt that may correspond with their knitwear clothing line and/or pants.

Applied Textile Design 40S

Students explore surface design techniques such as batik, embroidery, stenciling, applique and beadwork. Techniques learned will be applied to clothing and fashion accessories. Fashion illustrations will be created through experimentation with a variety of art media.

Grade 12 3 Credits

Tailored Garment Design and Construction 40S

The purpose of this advanced sewing course is to give students an overview of tailoring techniques. Students study the anatomy, theory, and evolution of tailored garments. Students will utilize skills and techniques developed throughout the semester in order to design and construct a jacket.

Formal Wear Design & Construction 40S

The purpose of this advanced sewing course is to build upon the skills developed from Semi-Formal Design and Construction 30S. Students will design and construct a lined gown.

Applied Fashion Entrepreneurship 40S

The purpose of this course is to simulate a realistic experience working in the fashion industry. The class begins with studying communication, team building, planning and goal setting. Students utilize these skills to plan several fashion-related events, inclusive of a clothing swap, photoshoot, and fashion show.

WELDING TECHNOLOGY

OVERVIEW

The Welding Technology Program is accredited by the Department of Education and students who meet the requirements of the Red Seal Program will be eligible for 1st level Red Seal Welder Apprenticeship status upon graduation. Students are also eligible to test for their CWB (Canadian Welding Bureau) tickets.

The philosophy of the program is that if you can dream it, you can design it and manufacture it.

Students will be:

- Provided with training on various welding processes including oxy-acetylene welding/cutting, SMAW (Shielded Metal Arc Welding), GMAW (Gas Metal Arc Welding), MCAW (Metal Core Arc Welding) and GTAW (Gas Tungsten Arc Welding). Instruction in blueprint reading, drafting, practical mathematics & measuring tools are taught in all courses.
- Provided with training on band saws, drilling machines, shears, brakes, bending machines, manual and CNC plasma cutting.
- Provided with the skills and knowledge necessary to establish a career in the Manufacturing Industries or advance their education at Red River College or MITT.
- Students from our program have found employment with New Flyer Industries, MacDon Industries, CN rail, Cadorath Aerospace, Boilermakers, Ironworkers, Grainmaster, Affinity Welding, Tatra Industries, Northern Blower and Manitoba Hydro to name a few.
- Encouraged to enter the Skills Manitoba Competition for welding.

Upon completion of the program, students will be well prepared for direct entry into the workforce or for further study at University or Community College.

Required supplies:

CSA approved steel-toed footwear.

WELDING TECHNOLOGY

Grade 9

Exploring Technical Education

Includes: Exploration of Welding Technology 15S and Introduction to Automotive Technology 15S
These are introductory courses intended for students wishing to sample both Welding Technology and Automotive Technology. The emphasis is on hands-on activities. Students are introduced to safety, hand tools and equipment specific to each area. Drill presses, welding procedures, along with automotive systems and service procedures will be introduced.

Grade 10 2 Credits

Introduction to Welding 20S

This course is intended to introduce students to a potential career in welding. The emphasis is on hands-on basic welding activities using GMAW(MIG), SMAW(ARC), and Oxy-Acetylene equipment.

Basic GMAW Procedures 30S

This course is intended for students who want to take their skills to the next level. The emphasis is on hands-on basic flat GMAW(MIG) welding procedure.

Grade 11 3 Credits

Metal Design Fabrication Oxy-Acetylene 30S

Recommended Prerequisite: Introduction to Welding 20S and Basic GMAW(MIG) Procedures 30S

This course is intended for students who are considering a career in welding. The emphasis is on the design and fabrication of intermediate metal projects, as well as on Oxy-Acetylene procedures.

Basic SMAW Procedures 30S

Recommended Prerequisite: Introduction to Welding 20S, Basic GMAW(MIG) Procedures 30S

This course is intended for students who are considering a career in welding. The emphasis is on hands-on basic flat SMAW(ARC) welding procedures.

Advanced GMAW Procedures 40S

Recommended Prerequisite: Introduction to Welding 20S, Basic GMAW(MIG) Procedures 30S

This course is intended for students who are interested in pursuing a career in welding. The emphasis is on hands-on advanced positional GMAW(MIG) welding procedures.

WELDING TECHNOLOGY

Grade 12 3 Credits

Work experience will be introduced to all Grade 12 courses.

Advanced SMAW(ARC) Procedures 40S

Recommended Prerequisite: Open to full - time Welding students only.

This course is intended for students who are pursuing a career in welding. The emphasis is on hands-on advanced positional SMAW(ARC) welding procedures.

Advanced Metal Design/Fabrication 40S

Recommended Prerequisite: Open to full-time Welding students only

This course will be on interest to students who intend to pursue a career in welding. The emphasis is on the design and fabrication of advanced metal projects.

Applied Specialties & Qualifications 40S

Recommended Prerequisite: Open to full-time Metal Fabrication students only.

Topics covered will include: rigging, thread and tool repair, and students will get to manufacture a student initiated project using skills obtained over the course of the program.

CAREERS

Our students have had success in industry in the following occupations:

Welders/Fitters
Boilermakers
Aerospace
Millwrights
Sheet Metal Workers
HVAC Technicians
Rail Care Mechanics

There are many businesses our students have found employment at:

Boilermakers
Ali-Arc Welding
Affinity Welding
Standard Aero
Winnipeg Wheel Works
Progressive Machine
Capitol Steel
Kinetic Machine
Ironworkers
GrainMaster
New Flyer Industries
MacDon Industries
Merit Iron
Tatra Industries
Cadorath
Price Industries
Manitoba Hydro

METALS & AEROSPACE

OVERVIEW

The Murdoch MacKay Collegiate Metals & Aerospace Program is accredited by the Department of Education and students who meet the requirements of the Red Seal Program will be eligible for the 1st level Red Seal Machinist and Tool and Die Apprenticeship status upon graduation.

The philosophy of the program is that if you can dream it, you can design it and manufacture it.

Students will be:

- Provided with training on machine tools such as engine lathes, milling machines, surface grinders, band saws, drilling machines, shears, brakes, bending machines and various heat-treating processes including oxy-acetylene. Instruction in blueprint reading, drafting, practical mathematics & measuring tools are taught in all courses.
- Provided with the skills and knowledge necessary to establish a career in the Manufacturing Industries, whether it is Machining, Tool & Die, Millwrighting or Aerospace.
- Learning skills that are transferable to many career choices within the industries.
- Encouraged to enter the Skills Manitoba competition in machining.

Upon completion of the program, students will be well prepared for direct entry into the workforce or for further study at University or Community College.

Required supplies are a Casio FX260 Scientific calculator, clear safety glasses and CSA approved footwear.

Grade 9

Exploring Technical Education

Includes: Exploring of Machining/Carpentry 15S

Participating students will complete a variety of activities and projects in both areas over one semester and gain a wide range of skills. Upon completion of the course, students will be able to make future course selections based on their success and specific interests. These are introductory courses intended for students wishing to sample both Carpentry and Machining. The emphasis is on hands-on activities. Students will be introduced to safety, tools and equipment specific to each area. Carpentry fundamentals and metal fabrication processes will be introduced.

Grade 10 2 Credits

Lathe Operations & Grinding I 30S

This basic machining course will provide training on the safe and effective use of the horizontal lathe. Students will perform procedures for turning, form turning and grooving.

Milling Operations 1 30S

The safe and effective use of the vertical milling machine will be taught including an introduction to milling machine set ups, measuring tools, and the vertical mill. This course will also introduce the vertical CNC machine.

Grade 11 3 Credits

Bench Metals 20S
Drill Press and Metal Cutting Saws 30S
Lathe Operations & Grinding II 40S

Grade 11 students will be introduced to single point threading, taper turning, boring, machining between centres, alignment of lathe centres and machining in a four jaw chuck. Sheet metal projects will also be introduced.

METALS & AEROSPACE

Grade 12 3 Credits

CNC Machining 40S
Applied Machine Manufacturing Technology 40S
Milling Operations 2 40S

Grade 12 students will go more in depth into Computerized Numerical Control (CNC) equipment, the Cartesian Co-ordinate system and basic programming of CNC equipment manually and using CAD/CAM software. Other topics covered will include rigging, thread and tool repair, bearings and seals, and students will get to manufacture a student-initiated project using skills obtained over the course of the program.

CAREERS

Our students have had success in industry in the following occupations:

Machinists
Tool & Die Makers
GTR&O
Aerospace
Millwrights (Industrial Mechanic)
Service Technicians
Sheet Metal Workers
HVAC Technicians
CAD/CAM Technicians
Quality Control
Mechanical Engineering

There are well over 100 shops in the city looking for some sort of fabricator including:

Cadorath Aerospace
Nordstrong Ltd
Wallin Industries
Standard Aero
Dynamic Machine
Northern Blower
GrainMaster
New Flyer Industries
MacDon Industries
NC Machine
Boeing
Standard Manufacturing

What students are saying:

"I like the hands-on approach and enjoyed working on the equipment."

"This was the perfect course to help me get started in Aerospace."

"This course was great, the teachers went out of the way to help the students."

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