Canadian and World Studies Courses
Grades 9 to 12

GEOGRAPHY

Issues in Canadian Geography, Grade 9
Academic CGC1D1
This course examines interrelationships within and between Canada’s natural and human systems and how these systems interconnect with those in other parts of the world. Students will explore environmental, economic, and social geographic issues relating to topics such as transportation options, energy choices, and urban development. Students will apply the concepts of geographic thinking and the geographic inquiry process, including spatial technologies, to investigate various geographic issues and to develop possible approaches for making Canada a more sustainable place to live.
Prerequisite: None

Issues in Canadian Geography, Grade 9
Applied CGC1P1
This course focuses on current geographic issues that affect Canadians. Students will draw on their personal and everyday experiences as they explore a range of issues, including food and water supplies, competing land uses, and interactions with the natural environment, developing their awareness that issues that affect their lives are interconnected with issues in other parts of the world. Students will apply the concepts of geographic thinking and the geographic inquiry process, including spatial technologies, to investigate choices related to sustainable living in Canada.
Prerequisite: None

Travel and Tourism: A Geographic Perspective, Grade 11
Open CGG3O1
This course focuses on issues related to travel and tourism within and between various regions of the world. Students will investigate unique environmental, sociocultural, economic, and political characteristics of selected world regions. They will explore travel patterns and trends as well as tensions related to tourism, and will predict future tourism destinations. Students will apply the concepts of geographic thinking and the geographic inquiry process, including spatial technologies, to investigate the impact of the travel industry on natural environments and human communities.
Prerequisite: Canadian Geographic Issues, Grade 9, Academic or Applied
World Issues: A Geographic Analysis, Grade 12
University Preparation CGW4U1
This course looks at the global challenge of creating a more sustainable and equitable world. Students will explore a range of issues involving environmental, economic, social, and geopolitical interrelationships, and will examine governmental policies related to these issues. Students will apply the concepts of geographic thinking and the geographic inquiry process, including spatial technologies, to investigate these complex issues, including their impact on natural and human communities around the world.
Prerequisite: Any university or university/college preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

The Environment and Resource Management, Grade 12
University/College Preparation CGR4M1
This course explores interactions between the natural and human environment, with a particular focus on the impact of human activity on various ecosystems. Students will explore resource management and sustainability practices, as well as related government policy and international protocols. Applying the concepts of geographic thinking and the geographic inquiry process, including spatial technologies, students will investigate the relationship between people and the natural environment and will propose approaches for developing more sustainable relationships, including environmentally responsible actions that support stewardship.
Prerequisite: Any university, university/college, or college preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

Spatial Technologies in Action, Grade 12
University/College Preparation CGO4M1
This course provides a foundation for students who wish to pursue a career that requires the ability to use computer-based spatial technologies. Students will analyze and propose solutions to real-life issues related to spatial organization, such as determining transportation routes, the most appropriate location for community services, or potential conservation and preservation areas. Students will extend their ability to use geographic information systems (GIS), global positioning systems (GPS), and remote sensing and to create maps, charts, and graphs. Students will apply the concepts of geographic thinking and the geographic inquiry process to investigate various issues related to spatial organization.
Prerequisite: Any university, university/college, or college preparation course in Canadian and World Studies, English, or Social Sciences and Humanities
HISTORY

Canadian History since World War I, Grade 10
Academic, CHC2D1
This course explores social, economic, and political developments and events and their impact on the lives of different groups in Canada since 1914. Students will examine the role of conflict and cooperation in Canadian society, Canada’s evolving role within the global community, and the impact of various individuals, organizations, and events on Canadian identity, citizenship, and heritage. They will develop their ability to apply the concepts of historical thinking and the historical inquiry process, including the interpretation and analysis of evidence, when investigating key issues and events in Canadian history since 1914.
Prerequisite: None

Canadian History since World War I, Grade 10
Applied, CHC2P1
This course focuses on the social context of historical developments and events and how they have affected the lives of people in Canada since 1914. Students will explore interactions between various communities in Canada as well as contributions of individuals and groups to Canadian heritage and identity. Students will develop their ability to apply the concepts of historical thinking and the historical inquiry process, including the interpretation and analysis of evidence, when investigating the continuing relevance of historical developments and how they have helped shape communities in present-day Canada.
Prerequisite: None

World History to the End of the Fifteenth Century, Grade 11
University/College Preparation CHW3M1
This course explores the history of various societies around the world, from earliest times to around 1500 CE. Students will examine life in and the legacy of various ancient and pre-modern societies throughout the world, including those in, Africa, Asia, Europe, and the Americas. Students will extend their ability to apply the concepts of historical thinking and the historical inquiry process, including the interpretation and analysis of evidence, when investigating social, political, and economic structures and historical forces at work in various societies and in different historical eras.
Prerequisite: Canadian History since World War I, Grade 10, Academic or Applied

World History since the Fifteenth Century, Grade 12
University Preparation CHY4U1
This course traces major developments and events in world history since approximately 1450. Students will explore social, economic, and political changes, the historical roots of contemporary issues, and the role of conflict and cooperation in global interrelationships. They will extend their ability to apply the concepts of historical thinking and the historical inquiry process, including the interpretation and analysis of evidence, as they investigate key issues and assess societal progress or decline in world history.
Prerequisite: Any university or university/college preparation course in Canadian and World Studies, English, or Social Sciences and Humanities.
Canadian and International Law, Grade 12  
University Preparation CLN4U1  
This course explores a range of contemporary legal issues and how they are addressed in both Canadian and international law. Students will develop their understanding of the principles of Canadian and international law when exploring rights and freedoms within the context of topics such as religion, security, cyberspace, immigration, crimes against humanity, and environmental protection. Students will apply the concepts of legal thinking and the legal inquiry process when investigating these issues in both Canadian and international contexts, and they will develop legal reasoning skills and an understanding of conflict resolution in the area of international law. 
Prerequisite: Any university or university/college preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

Civics and Citizenship, Grade 10, 1/2 credit  
CHV2O3, Open  
This course explores what it means to be an informed, participating citizen in a democratic society. Students will learn about the elements of democracy in local, national, and global contexts, about political reactions to social change, and about political decision-making processes in Canada. They will explore their own and others’ ideas about civics questions and learn how to think critically about public issues and react responsibly to them.  
Prerequisite: None
Classical and International Studies Courses
Grades 9 to 12

Classical and International Studies

Classical Civilization, Grade 12
University Preparation, LVV4U1
This course introduces students to the rich cultural legacy of the Classical world and encourages them to make connections between antiquity and other societies and to their own personal experiences. Students will investigate such aspects of Classical culture as its mythology and literature, art, architecture, philosophy, science, and technology, as well as elements of the ancient Greek and Latin languages. By reading Classical authors in English translation and examining material culture brought to light through archaeology, students will enhance both their communication skills and their ability to think critically and creatively. In addition, they will be encouraged to be culturally sensitive, independent learners who appreciate the interconnectedness of ancient and modern societies and who will be able to apply this understanding to their future endeavours.

Prerequisite: English, Grade 10, Academic or Applied
ICS201, Grade 10
**Introduction to Computer Studies, Open**
This course introduces students to computer programming with a specific focus on game development and design for the Microsoft Xbox. Students will play and write simple computer programs by applying fundamental programming concepts, and learn to create clear and maintainable internal documentation. They will also learn to manage a computer by studying hardware configurations, software selection, operating system functions, networking, and safe computing practices. Students will also investigate the social impact of computer technologies, and develop an understanding of environmental and ethical issues related to the use of computers.
**Prerequisite: None**

TEJ201, Grade 10
**Computer Engineering Technology, Open**
This course introduces students to computer systems, networking, and interfacing, as well as electronics and robotics. Students will assemble, repair, and configure computers with various types of operating systems and application software. Students will build small electronic circuits and write computer programs to control simple peripheral devices or robots. Students will also develop an awareness of environmental and societal issues related to the use of computers, and learn about secondary and postsecondary pathways to careers in computer technology.
**Prerequisite: None**

ICS3U1 Grade 11
**Introduction to Computer Science, University**
This course introduces students to computer science. Students will design software independently and as part of a team, using industry-standard programming tools and applying the software development life-cycle model. They will also write and use subprograms within computer programs. Students will develop creative solutions for various types of problems and design and develop games for the Microsoft Xbox 360 or Android based devices. They will also explore environmental and ergonomic issues, emerging research in computer science, and global career trends in computer-related fields such as the fast growing gaming industry.
**Prerequisite: None**
**Recommended: ICS201 or TEJ2O1**
TEJ3M1, Grade 11
**Computer Engineering Technology, University/College**
This course examines computer systems and control of external devices. Students will assemble computers and small networks by installing and configuring appropriate hardware and software. Students will develop knowledge and skills in electronics, robotics, programming, and networks, and will build systems that use computer programs and interfaces to control and/or respond to external devices. Students will develop an awareness of environmental and societal issues related to the use of computers, and will learn about college and university programs leading to careers in computer engineering.

**Prerequisite:** None  
**Recommended:** ICS201 or TEJ2O1

TEJ4M1, Grade 12
**Computer Engineering Technology, University/College**
This course extends students' understanding of computer systems and computer interfacing with external devices. Students will assemble computer systems by installing and configuring appropriate hardware and software, and will learn more about fundamental concepts of electronics, robotics, programming, and networks. Students will examine environmental and societal issues related to the use of computers, and explore postsecondary pathways leading to careers in computer engineering and related fields.

**Prerequisites:** TEJ3M1

ICS4U1- Grade 12
**Computer Science, University**
This course enables students to further develop knowledge and skills in computer science with a specific focus on game development and design. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyze algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.

**Prerequisite:** ICS3U1
ENGLISH

English, Grade 9
Applied, ENG1P1
This course is designed to develop the key oral communication, reading, writing, and media literacy skills students need for success in secondary school and daily life. Students will read, interpret, and create a variety of informational, literary, and graphic texts. An important focus will be on identifying and using appropriate strategies and processes to improve students’ comprehension of texts and to help them communicate clearly and effectively. The course is intended to prepare students for the Grade 10 applied English course, which leads to college or workplace preparation courses in Grades 11 and 12.
Prerequisite: None

English, Grade 9
Academic, ENG1D1
This course is designed to develop the oral communication, reading, writing, and media literacy skills that students need for success in their secondary school academic programs and in their daily lives. Students will analyse literary texts from contemporary and historical periods, interpret informational and graphic texts, and create oral, written, and media texts in a variety of forms. An important focus will be on the use of strategies that contribute to effective communication. The course is intended to prepare students for the Grade 10 academic English course, which leads to university or college preparation courses in Grades 11 and 12.
Prerequisite: None

English, Grade 10
Applied, ENG2P1
This course is designed to extend the range of oral communication, reading, writing, and media literacy skills that students need for success in secondary school and daily life. Students will study and create a variety of informational, literary, and graphic texts. An important focus will be on the consolidation of strategies and processes that help students interpret texts and communicate clearly and effectively. This course is intended to prepare students for the compulsory Grade 11 college or workplace preparation course.
Prerequisite: English, Grade 9, Academic or Applied
English, Grade 10
Academic, ENG 2D1
This course is designed to extend the range of oral communication, reading, writing, and media literacy skills that students need for success in their secondary school academic programs and in their daily lives. Students will analyse literary texts from contemporary and historical periods, interpret and evaluate informational and graphic texts, and create oral, written, and media texts in a variety of forms. An important focus will be on the selective use of strategies that contribute to effective communication. This course is intended to prepare students for the compulsory Grade 11 university or college preparation course.
Prerequisite: English, Grade 9, Academic or Applied

English, Grade 11
College Preparation, ENG3C1
This course emphasizes the development of literacy, communication, and critical and creative thinking skills necessary for success in academic and daily life. Students will study the content, form, and style of a variety of informational and graphic texts, as well as literary texts from Canada and other countries, and create oral, written, and media texts in a variety of forms for practical and academic purposes. An important focus will be on using language with precision and clarity. The course is intended to prepare students for the compulsory Grade 12 college preparation course.
Prerequisite: English, Grade 10, Applied

English, Grade 11
University Preparation, ENG3U1
This course emphasizes the development of literacy, communication, and critical and creative thinking skills necessary for success in academic and daily life. Students will analyse challenging literary texts from various periods, countries, and cultures, as well as a range of informational and graphic texts, and create oral, written, and media texts in a variety of forms. An important focus will be on using language with precision and clarity and incorporating stylistic devices appropriately and effectively. The course is intended to prepare students for the compulsory Grade 12 university or college preparation course.
Prerequisite: English, Grade 10, Academic

English, Grade 12
College Preparation, ENG4C1
This course emphasizes the consolidation of literacy, communication, and critical and creative thinking skills necessary for success in academic and daily life. Students will analyse a variety of informational and graphic texts, as well as literary texts from various countries and cultures, and create oral, written, and media texts in a variety of forms for practical and academic purposes. An important focus will be on using language with precision and clarity and developing greater control in writing. The course is intended to prepare students for college or the workplace.
Prerequisite: English, Grade 11, College Preparation
English, Grade 12  
**University Preparation, ENG4U1**
This course emphasizes the consolidation of the literacy, communication, and critical and creative thinking skills necessary for success in academic and daily life. Students will analyse a range of challenging literary texts from various periods, countries, and cultures; interpret and evaluate informational and graphic texts; and create oral, written, and media texts in a variety of forms. An important focus will be on using academic language coherently and confidently, selecting the reading strategies best suited to particular texts and particular purposes for reading, and developing greater control in writing. The course is intended to prepare students for university, college, or the workplace.  
**Prerequisite: English, Grade 11, University Preparation**

Media Studies, Grade 11  
**Open, EMS3O1**
This course emphasizes knowledge and skills that will enable students to understand media communication in the twenty-first century and to use media effectively and responsibly. Through analysing the forms and messages of a variety of media works and audience responses to them, and through creating their own media works, students will develop critical thinking skills, aesthetic and ethical judgement, and skills in viewing, representing, listening, speaking, reading, and writing.  
**Prerequisite: English, Grade 10, Academic or Applied**

The Writer’s Craft, Grade 12  
**University Preparation, EWC4U1**
This course emphasizes knowledge and skills related to the craft of writing. Students will analyse models of effective writing; use a workshop approach to produce a range of works; identify and use techniques required for specialized forms of writing; and identify effective ways to improve the quality of their writing. They will also complete a major paper as part of a creative or analytical independent study project and investigate opportunities for publication and for writing careers.  
**Prerequisite: English, Grade 11, University Preparation**
French as a Second Language
Grades 9 to 12

Core French

Core French, Grade 9
Academic, FSF1D1
This course provides opportunities for students to communicate and interact in French with increasing independence, with a focus on familiar topics related to their daily lives. Students will continue to develop language knowledge and skills by using language-learning strategies introduced in the elementary Core French program, and will apply creative and critical thinking skills in various ways. They will also enhance their understanding and appreciation of diverse French-speaking communities, and will develop the skills necessary to become life-long language learners.
Prerequisite: Minimum of 600 hours of elementary Core French instruction, or equivalent

Core French, Grade 9
Academic (Enriched), FSF1DE
This course is open to students from Extended or Immersion programs, and French schools, and to students with an equivalent instruction in French. It provides opportunities for students to communicate in French about personally relevant, familiar, and academic topics in real-life situations with increasing independence. Students will exchange information, ideas, and opinions with others in guided and increasingly spontaneous spoken interactions. They will continue to develop their language knowledge as well as creative and critical thinking skills, through the selective use of strategies that contribute to effective communication. Students will also enhance their understanding and appreciation of diverse French-speaking communities, and continue to develop the skills necessary to become life-long language learners.
Prerequisite: Minimum of 1260 hours of instruction in elementary Extended French, or equivalent

Core French, Grade 9
Applied, FSF1P1
This course provides opportunities for students to communicate and interact in French in structured situations on everyday topics and to apply their knowledge of French in everyday situations. Students will continue to develop language knowledge and skills introduced in the elementary Core French program, through practical applications and concrete examples, and will use creative and critical thinking skills in various ways. They will also enhance their understanding and appreciation of diverse French-speaking communities, and will develop the skills necessary to become life-long language learners.
Prerequisite: Minimum of 600 hours of elementary Core French instruction, or equivalent
Core French, Grade 10

**Academic, FSF2D1**

This course provides opportunities for students to communicate in French about personally relevant, familiar, and academic topics in real-life situations with increasing independence. Students will exchange information, ideas, and opinions with others in guided and increasingly spontaneous spoken interactions. Students will continue to develop their language knowledge and skills through the selective use of strategies that contribute to effective communication. They will also increase their understanding and appreciation of diverse French-speaking communities, and will continue to develop the skills necessary to become life-long language learners.

**Prerequisite: Core French, Grade 9, Academic**

Core French, Grade 11

**University Preparation, FSF3U1**

This course offers students extended opportunities to speak and interact in real-life situations in French with greater independence. Students will develop their creative and critical thinking skills through responding to and exploring a variety of oral and written texts. They will continue to broaden their understanding and appreciation of diverse French-speaking communities and to develop the skills necessary for life-long language learning.

**Prerequisite: Core French, Grade 10, Academic or Core French, Grade 9, Enriched**

Core French, Grade 12

**University Preparation, FSF4U1**

This course provides extensive opportunities for students to speak and interact in French independently. Students will apply language-learning strategies in a wide variety of real-life situations, and will continue to develop their creative and critical thinking skills through responding to and interacting with a variety of oral and written texts. Students will also continue to enrich their understanding and appreciation of diverse French-speaking communities and to develop the skills necessary for life-long language learning.

**Prerequisite: Core French, Grade 11, University Preparation**
Guidance and Career Education Courses
Grades 9 to 12

**CAREER EDUCATION**

**Career Studies, Grade 10, 1/2 credit**
GLC 2O3, Open
This compulsory course teaches students how to develop and achieve personal goals for future learning, work, and community involvement. Students will assess their interests, skills, and characteristics and investigate current economic and workplace trends, work opportunities, and ways to search for work. The course explores postsecondary learning and career options, prepares students for managing work and life transitions, and helps students focus on their goals through the development of a career plan.

**Prerequisite: None**

**Leadership and Peer Support, Grade 11**
GPP 3O1, Open
This course prepares students to act in leadership and peer support roles. They will design and implement a plan for contributing to their school and/or community; develop skills in communication, interpersonal relations, teamwork, and conflict management; and apply those skills in leadership and/or peer support roles – for example, as a student council member or a peer tutor. Students will examine group dynamics and learn the value of diversity within groups and communities.

**Prerequisite: None**
HEALTH AND PHYSICAL EDUCATION

**Healthy Active Living Education I, Grade 9, Half Credit**
*Open, PPL 1OA, 1/2 credit*
This course emphasizes regular participation in a variety of enjoyable physical activities that promote lifelong healthy active living. Students will learn movement skills and principles, ways to improve personal fitness and physical competence, and safety and injury prevention. They will investigate issues related to healthy sexuality and the use and abuse of alcohol, tobacco, and other drugs and will participate in activities designed to develop goal-setting, communication and social skills.

*Prerequisite: None*

**Healthy Active Living Education II, Grade 9, Half Credit**
*Open, PPL 1OB, 1/2 credit*
This course emphasizes regular participation in a variety of enjoyable physical activities that promote lifelong healthy active living. Students will learn movement skills and principles, ways to improve personal fitness and physical competence, and safety and injury prevention. They will investigate issues related to healthy sexuality and the use and abuse of alcohol, tobacco, and other drugs and will participate in activities designed to develop goal-setting, communication and social skills.

*Prerequisite: None*

**Healthy Active Living Education, Grade 11**
*Open PPL 3O1*
This course focuses on the development of a healthy lifestyle and participation in a variety of enjoyable physical activities that have the potential to engage students’ interest throughout their lives. Students will be encouraged to develop personal competence in a variety of movement skills, and will be given opportunities to practice goal-setting, decision-making, coping, social and interpersonal skills. Students will also study the components of healthy relationships, reproductive health, mental health and personal safety.

*Prerequisite: None*

**Healthy Active Living, Grade 12**
*Open PPL 4O1*
This course focuses on the development of a personalized approach to healthy active living through participation in a variety of sports and recreational activities that have the potential to engage students’ interest throughout their lives. Students will develop and implement personal physical fitness plans. In addition, they will be given opportunities to refine their decision-making, conflict resolution and interpersonal skills, with a view to enhance their mental health and their relationships with others.

*Prerequisite: None*
Exercise Science, Grade 12
University Preparation, PSE 4U1
This course focuses on the study of human movement and of systems, factors and principles involved in human development. Students will learn about the effects of physical activity on health and performance, the evolution of physical activity and sports and the factors that influence an individual’s participation in physical activity. The course prepares students for university programs in physical education, kinesiology, recreation and sports administration. **Prerequisite: Any Grade 11 University or University/College Preparation Course in Science or any Grade 11 or 12 Open Course in Health and Physical Education**
**Interdisciplinary Studies Courses**  
**Grades 9 to 12**

**IDC3O1: Art Enterprise, PART 1**  
**Grade 11**  
**Course Type:** Open, **Credit Value:** 1.0  
This course will help students develop and consolidate the skills required for and knowledge of different subjects and disciplines to solve problems, make decisions, create personal meaning, and present findings beyond the scope of a single subject or discipline. Students will apply the principles and process of inquiry and research to effectively use a range of print, electronic, and mass media resources; to analyze Historical innovations and exemplary research; and to investigate real-life situations and career opportunities in interdisciplinary endeavours. They will also assess their own cognitive and affective strategies, apply general skills in both familiar and new contexts, create innovative products, and communicate new knowledge.  
**Prerequisite:** none

**IDC4U1: The Business of Arts. PART 2**  
**Grade:**12  
**Course Type:** University Level, **Credit Value:** 1.0

The B. of A. course is designed to teach future leaders to blend entrepreneurial thought with creativity, forming a successful and sustainable approach to business and cultural markets. The program seeks to empower professionals of all ages and disciplines for tomorrow's markets by teaching them strategic skills necessary to lead their respective Arts areas. The Art Enterprise course focuses on 6 business areas that are tailored to the demands of the creative world. This allows you, as an artist or an arts professional, to support your creative abilities by developing an extensive knowledge and understanding of business. Furthermore, the IDC4U: B. of A. is designed to educate and support future industry leaders to blend entrepreneurial thought and artistic creativity to inspire growth and sustainability in the cultural markets. The Arts Enterprise course will empower artists of all ages and disciplines to fuel the cultural community of tomorrow by teaching the strategic skills today’s artists need to take leadership in their field.  
**Prerequisite: one of the following courses:**
- Media Arts - EMS3O1
- Communication Technologies: Digital Photography - TGP3M1
- Communication Technologies: TV-Film and Video Production - TGV4M1
- Communication Technologies: Print and Graphic Communication - TGG3M1
- GR 11 DRAMA: ADA3M1
- GR11 DANCE : ATC3M1
- GR 11 VISUAL ARTS: AVI3M1
- GR 11 MUSIC : AMU3M1
MATHEMATICAL NV

Principles of Mathematics, Grade 9

Academic, MPM 1D1
This course enables students to develop an understanding of mathematical concepts related to algebra, analytic geometry, and measurement and geometry through investigation, the effective use of technology, and abstract reasoning. Students will investigate relationships, which they will then generalize as equations of lines, and will determine the connections between different representations of a linear relation. They will also explore relationships that emerge from the measurement of three-dimensional figures and two-dimensional shapes. Students will reason mathematically and communicate their thinking as they solve multi-step problems. Successful completion of this course prepares students for Principles of Mathematics, Grade 10, Academic (MPM 2D) or Foundations of Mathematics, Grade 10, Applied (MFM 2P). Learning through abstract reasoning is an important aspect of this course.

Prerequisite: None

Foundations of Mathematics, Grade 9

Applied, MFM 1P1
This course enables students to develop an understanding of mathematical concepts related to introductory algebra, proportional reasoning, and measurement and geometry through investigation, the effective use of technology, and hands-on activities. Students will investigate real-life examples to develop various representations of linear relations, and will determine the connections between the representations. They will also explore certain relationships that emerge from the measurement of three-dimensional objects and two-dimensional shapes. Students will consolidate their mathematical skills as they solve problems and communicate their thinking. Successful completion of this course prepares students for Foundations of Mathematics, Grade 10, Applied (MFM 2P). (Note: Students who wish to take Principles of Mathematics, Grade 10, Academic (MPM 2D) after completing this course will need to take a transfer course.) Learning through hands-on activities and the use of concrete examples is an important aspect of this course.

Prerequisite: None

Principles of Mathematics, Grade 10

Academic, MPM 2D1
This course enables students to broaden their understanding of relationships and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and abstract reasoning. Students will explore quadratic relations and their applications; solve and apply linear systems; verify properties of geometric figures using analytic geometry; and investigate the trigonometry of right and acute triangles. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

Prerequisite: Mathematics, Grade 9, Academic or Applied + Transfer
Foundations of Mathematics, Grade 10

Applied MFM 2P1
This course enables students to consolidate their understanding of linear relations and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and hands-on activities. Students will develop and graph equations in analytic geometry; solve and apply linear systems, using real-life examples; and explore and interpret graphs of quadratic relations. Students will investigate similar triangles, the trigonometry of right triangles, and the measurement of three-dimensional figures. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.
Prerequisite: Mathematics, Grade 9, Academic or Applied

Functions, Grade 11

University Preparation MCR 3U1
This course introduces the mathematical concept of the function by extending students’ experiences with linear and quadratic relations. Students will investigate properties of discrete and continuous functions, including trigonometric and exponential functions; represent functions numerically, algebraically, and graphically; solve problems involving applications of functions; and develop facility in simplifying polynomial and rational expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.
Prerequisite: Principles of Mathematics, Grade 10, Academic

Functions and Applications, Grade 11

University/College Preparation, MCF 3M1
This course introduces basic features of the function by extending students’ experiences with quadratic relations. It focuses on quadratic, trigonometric, and exponential functions and their use in modelling real-world situations. Students will represent functions numerically, graphically, and algebraically; simplify expressions; solve equations; and solve problems relating to financial and trigonometric applications. Students will reason mathematically and communicate their thinking as they solve multi-step problems.
Prerequisite: Principles of Mathematics, Grade 10, Academic, or Foundations of Mathematics, Grade 10, Applied

Foundations for College Mathematics, Grade 11

College Preparation, MBF 3C1
This course enables students to broaden their understanding of mathematics as a problem-solving tool in the real world. Students will extend their understanding of quadratic relations, as well as of measurement and geometry; investigate situations involving exponential growth; solve problems involving compound interest; solve financial problems connected with vehicle ownership; and develop their ability to reason by collecting, analyzing, and evaluating data involving one and two variables. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.
Prerequisite: Foundations of Mathematics, Grade 10, Applied
Mathematics for College Technology, Grade 12
College Preparation, MCT 4C1
This course enables students to extend their knowledge of functions. Students will investigate and apply properties of polynomial, exponential, and trigonometric functions; continue to represent functions numerically, graphically, and algebraically; develop facility in simplifying expressions and solving equations; and solve problems that address applications of algebra, trigonometry, vectors and geometry. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for a variety of college technology programs.
Prerequisite: Function and Applications, Grade 11, University/College Preparation.

Calculus and Vectors, Grade 12
University Preparation, MCV4U1
This course builds on students’ previous experience with functions and their developing understanding of rates of change. Students will solve problems involving geometric and algebraic representations of vectors, and representations of lines and planes in three-dimensional space; broaden their understanding of rates of change to include the derivatives of polynomial, rational, exponential, and sinusoidal functions; and apply these concepts and skills to the modeling of real-world relationships. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended for students who plan to study mathematics in university and who may choose to pursue careers in fields such as physics and engineering.
Prerequisite: Advanced Functions, Grade 12, University Prep. Note: In some schools, it may be necessary to take the prerequisite course concurrently with MCV4U.

Mathematics of Data Management, Grade 12
University Preparation, MDM 4U1
This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing large amounts of information; solve problems involving probability and statistics; and carry out a culminating project that integrates statistical concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. Students planning to enter university programs in business, the social sciences, and the humanities will find this course of particular interest.
Prerequisite: Functions and Applications, Grade 11, University/College Preparation, or Functions, Grade 11, University Preparation.

Advanced Functions, Grade 12
University Preparation, MHF4U1
This course extends students’ experience with functions. Students will investigate the properties of polynomial, rational, log arithmetic, and trigonometric functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended both for students who plan to study mathematics in university and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs.
Prerequisite: Functions, Grade 11, University Preparation, or Mathematics for College Technology, Grade 12, College Preparation.
Be With Me, Grade 9  
Open, HRE 1O3, 1/2 credit  
This course invites students to a deeper understanding of both the joy and the demands of following in the way of Christ and living out the call to discipleship as it is described in the Scriptures. Using the Beatitudes as a touchstone, students will examine the attitudes and actions that characterize the Christian life. Students will explore a variety of topics related to the themes of personhood, interpersonal relationships and sexuality. They are encouraged to understand and nurture within themselves the virtues which will enable them to deepen their relationship with God in and through Christ in the context of a Spirit-filled community.  
Prerequisite: None

Christ and Culture, Grade 10  
Open, HRE 2O3 1/2 credit  
This course both invites and challenges the adolescent to personalize the principles that guide Catholics in understanding their role in shaping culture through our discipleship. The exploration of these principles starts with the Scriptural foundations to the questions of what it means to be human and how God has and continues to shape our humanity through culture. The principles are then developed through the Gospel themes that reveal how Jesus’ Kingdom of God is expressed in all of our relationships: to ourselves, to others, to our civil society, to our church and to our Global community.  
Prerequisite: None

Church and Culture, Grade 12  
University/College, HRE 4M1  
This course has the aim of assisting students in understanding themselves as moral persons living in the way of Christ through an examination of ethical theories, the revelation of sacred Scripture and the experience and teaching of the Catholic Church. While grounded in Revelation, the course also examines the contributions of Philosophy and the sciences to a Catholic understanding of ethics and moral living. Students will explore their own ethical and moral stance through an examination of various arenas of life such as justice and peace, freedom, reconciliation, family, marriage and political life. This course is intended to prepare the senior student for the lifelong task of discerning what is good and of God while growing in their ability to live accordingly as moral persons and active life-giving members of a global society.  
Prerequisite: Grade 11 University College Religion and/or Grade 11 University or University/College English
WORLD RELIGION

World Religions and Belief Traditions: Perspectives, Issues, and Challenges, Grade 11
University/College Preparation, HRT3M1
This course provides students with opportunities to explore various world religions and belief traditions. Students will develop knowledge of the terms and concepts relevant to this area of study, will examine the ways in which religions and belief traditions meet various human needs, and will learn about the relationship between belief and action. They will examine sacred writings and teachings, consider how concepts of time and place influence different religions and belief traditions, and develop research and inquiry skills related to the study of human expressions of belief.

Prerequisite: None

Church and Culture, Grade 12, Leadership
University/College, HRE 4M2
This course has the aim of assisting students in understanding themselves as moral persons living in the way of Christ through an examination of ethical theories, the revelation of sacred Scripture and the experience and teaching of the Catholic Church. While grounded in Revelation, the course also examines the contributions of Philosophy and the sciences to a Catholic understanding of ethics and moral living. Students will explore their own ethical and moral stance through an examination of various arenas of life such as justice and peace, freedom, reconciliation, family, marriage and political life and will be a part of planning, organizing, and executing activities, liturgies, prayer services, initiatives, and projects that reveal Catholic student leadership. This course is intended to prepare the senior student for the lifelong task of discerning what is good and of God while growing in their ability to live accordingly as moral persons and active life-giving members of a global society.

Prerequisite: Grade 11 University College Religion and/or Grade 11 University or University/College English
*Students in the Leadership course will work closely with the Chaplaincy Department.
*Units of study will be viewed through the lens of Christian Leadership.
Teacher recommendation and a successful interview
Science Courses
Grades 9 to 12

Science

Science, Grade 9
Academic, SNC 1D1
This course enables students to develop their understanding of basic concepts in biology, chemistry, earth and space science, and physics, and to relate science to technology, society, and the environment. Throughout the course, students will develop their skills in the processes of scientific investigation. Students will acquire an understanding of scientific theories and conduct investigations related to sustainable ecosystems; atomic and molecular structures and the properties of elements and compounds; the study of the universe and its properties and components; and the principles of electricity.
Prerequisite: None

Science, Grade 9
Applied, SNC 1P1
This course enables students to develop their understanding of basic concepts in biology, chemistry, earth and space science and physics, and to apply their knowledge of science to everyday situations. They are also given opportunities to develop practical skills related to scientific investigation. Students will plan and conduct investigations related to the impact of human activity on ecosystems; the structure and properties of elements and compounds; space exploration and the components of the universe; and static and current electricity.
Prerequisite: None

Science, Grade 10
Academic, SNC 2D1
This course enables students to enhance their understanding of concepts in biology, chemistry, earth and space science and physics, and of the interrelationships between science, technology, society, and the environment. Students are also given opportunities to further develop their scientific investigation skills. Students will plan and conduct investigations and develop their understanding of scientific theories related to the connections between cells and systems in animals, plants; chemical reactions, with a particular focus on acid-base reactions; forces that affect climate and climate change; and the interaction of light and matter.
Prerequisite: Science, Grade 9, Academic or Applied
Science, Grade 10
**Applied, SNC 2P1**
This course enables students to develop a deeper understanding of concepts in biology, chemistry, earth and space science and physics, and to apply their knowledge of science in real-world situations. Students are given opportunities to develop further practical skills in scientific investigation. Students will plan and conduct investigations into everyday problems and issues related to human cells and body systems; chemical reactions; factors affecting climate change; and the interaction of light and matter.

**Prerequisite:** Science, Grade 9, Academic or Applied

**BIOLOGY**

Biology, Grade 11
**University Preparation, SBI 3U1**
This course furthers students’ understanding of the processes involved in biological systems. Students will study theory and conduct investigations in the areas of biodiversity; evolution; genetic processes; the structure and function of animals; and the anatomy, growth, and function of plants. The course focuses on the theoretical aspects of the topics under study, and helps students refine skills related to scientific investigation.

**Prerequisite:** Science, Grade 10, Academic

Biology, Grade 11
**College Preparation, SBI 3C1**
This course focuses on the processes that occur in biological systems. Students will learn concepts and theories as they conduct investigations in the areas of cellular biology, microbiology, genetics, the anatomy of mammals, and the structure of plants and their role in the natural environment. Emphasis will be placed on the practical application of concepts, and on the skills needed for further study in various branches of life sciences and related fields.

**Prerequisite:** Science, Grade 10, Academic or Applied

Biology, Grade 12
**University Preparation, SBI 4U1**
This course provides students with the opportunity for in-depth study of the concepts and processes that occur in biological systems. Students will study theory and conduct investigations in the areas of biochemistry, metabolic processes, molecular genetics, homeostasis, and population dynamics. Emphasis will be placed on the achievement of detailed knowledge and the refinement of skills needed for further study in various branches of the life sciences and related fields.

**Prerequisite:** Biology, Grade 11, University Preparation
CHEMISTRY

Chemistry, Grade 11
University Preparation, SCH 3U1
This course enables students to deepen their understanding of chemistry through the study of the properties of chemicals and chemical bonds; chemical reactions and quantitative relationships in those reactions; solutions and solubility; and atmospheric chemistry and the behaviour of gases. Students will further develop their analytical skills and investigate the qualitative and quantitative properties of matter, as well as the impact of some common chemical reactions on society and the environment.
**Prerequisite:** Science, Grade 10, Academic

Chemistry, Grade 12
University Preparation, SCH 4U1
This course enables students to deepen their understanding of chemistry through the study of organic chemistry, the structure and properties of matter, energy changes and rates of reaction, equilibrium in chemical systems, and electrochemistry. Students will further develop their problem-solving and investigative skills as they investigate chemical processes, and will refine their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment.
**Prerequisite:** Chemistry, Grade 11, University preparation

PHYSICS

Physics, Grade 11
University Preparation, SPH 3U1
This course develops students' understanding of the basic concepts of physics. Students will explore kinematics, with an emphasis on linear motion; different kinds of forces; energy transformations; the properties of mechanical waves and sound; and electricity and magnetism. They will enhance their scientific investigation skills as they test laws of physics. In addition, they will analyze the interrelationships between physics and technology, and consider the impact of technological applications of physics on society and the environment.
**Prerequisite:** Science, Grade 10, Academic

Physics, Grade 12
University Preparation, SPH 4U1
This course enables students to deepen their understanding of physics concepts and theories. Students will continue their exploration of energy transformations and the forces that affect motion, and will investigate electrical, gravitational, and magnetic fields and electromagnetic radiation. Students will also explore the wave nature of light, quantum mechanics, and special relativity. They will further develop their scientific investigation skills, learning, for example, how to analyze, qualitatively and quantitatively, data relating to a variety of physics concepts and principles. Students will also consider the impact of technological applications of physics on society and the environment.
**Prerequisite:** Physics, Grade 11, University Preparation
Families in Canada, Grade 12
University Preparation, HHS4U1
This course enables students to draw on sociological, psychological, and anthropological theories and research to analyze the development of individuals, intimate relationships, and family and parent-child relationships. Students will focus on issues and challenges facing individuals and families in Canada's diverse society. They will develop analytical tools that enable them to assess various factors affecting families and to consider policies and practices intended to support families in Canada. They will develop the investigative skills required to conduct and communicate the results of research on individuals, intimate relationships, and parent-child relationships.
Prerequisite: Any university or university/college preparation course in social sciences and humanities, English, or Canadian and world studies.

Philosophy: Questions and Theories, Grade 12
University Preparation, HZT4U1
This course enables students to acquire an understanding of the nature of philosophy and philosophical reasoning skills and to develop and apply their knowledge and skills while exploring specialized branches of philosophy (the course will cover at least three of the following branches: metaphysics, ethics, epistemology, philosophy of science, social and political philosophy, aesthetics). Students will develop critical thinking and philosophical reasoning skills as they formulate and evaluate arguments related to a variety of philosophical questions and theories. They will also develop research and inquiry skills related to the study and practice of philosophy.
Prerequisite: Any university or university/college preparation course in social sciences and humanities, English, or Canadian and world studies.
COMMUNICATIONS TECHNOLOGY

Introduction to Communications Technology, Grade 10
Open, TGFJ201
This course introduces students to communications technology from a media perspective. Students will work in the areas of TV-video and film production, radio and audio production, print and graphic communications, photography, and animation. Student projects may include computer-based activities such as creating videos, editing photos, working with audio, cartooning, developing animations, and designing web pages. Students will also develop an awareness of environmental and societal issues related to communications technology and explore secondary and post-secondary education, training pathways, and explore career opportunities in the various communications technology fields.
Prerequisites: None

TV-VIDEO & FILM PRODUCTION

Communications Technology: TV Video & Film Production, Grade 11
University/College, TGV3M1
This course introduces students to basic TV-video and film production techniques. Students will discover the process (used in making anything from sitcoms to documentaries) by which an idea or concept is developed into a finished production for a specific audience. The course provides students with the skill set for video preproduction, production and postproduction phases in making films. Students will explore these three phases in depth. Scripting is another ability that students acquire. Moreover, students will follow the same process as television professionals do in writing, shooting, and editing their own videos. Finally, students attain the conceptual abilities required to plan and carry a variety of video projects which may also include 2D/3D graphic design and animation. By the end of this course, students will have a DVD portfolio of all their digital media work. This course will primarily use Adobe Suite.
Prerequisites: None
Recommended: TGFJ201
Communications Technology: TV Video & Film Production, Grade 12

University/College, TGV4M1

In this course, students will further explore, enhance video / film expertise and techniques acquired in TGV3M. Computer animation and multimedia productions using particular software applications will be an additional component in this course as well as designing and creating Special Effects, combining animated character and real life. They will also understand that although the art of animation can be achieved using computers nowadays, characters must still express emotion, the viewer still has to be introduced to the setting, movement still anticipates action, and story is still king. The course covers such aspects as the pre-planning process to the post-production process and the final output. Students will be introduced to animation, or the illusion of movement, traditional 2D animation, stop motion, 3D animation and multimedia. Assignments and tutorials provided throughout the course followed by the development and completion of animated films / video or standard film and video plus multi-media portfolio (DVD) that can be submitted for post-secondary entrance requirements. This course will help prepare students for rewarding careers in related fields in the Movie, Televisions, Special Effects, Advertising, and many other Design and Entertainment related areas.

Prerequisites: TGV3M1

PHOTOGRAPHY & DIGITAL IMAGING

Communications Technology: Photography & Digital Imaging, Grade 11

University/College, TGP3M1

Students will explore the interaction of photography techniques and environmental factors to create powerful images. Students will learn the fundamentals of lighting, perspective, and set-up and explore techniques for classic assignments: portraits, product shots, indoor location shoots, and fast-action sports. Whether students want to explore the professions of a fine artist, a graphic designer or a Web developer, a mastery of digital photography gives them creative control of the medium. Students will learn to take better photographs with their digital cameras. They will also uncover features of their digital camera, transfer images to a computer, perform basic image adjustments using Adobe Photoshop CS3, archive photos for future use, and discover many creative ways to transform their digital photo into something they can hold in their hand. Assignments and tutorials provided throughout the course followed by the development and completion of a media arts portfolio that can be submitted for post-secondary entrance requirements. This course will help prepare students for rewarding careers in related fields in the Movie, Televisions, Special Effects, Advertising, and many other Design and Entertainment related areas.

Prerequisites: None
Communications Technology: Photography & Digital Imaging, Grade 12

**University/College: TGP4M1**

Students will be asked to express their creative talents while exploring the interaction of photography techniques and environmental factors to create powerful images. This class provides students the opportunity to learn how to use a DSLR camera and to participate in an in-depth study of the functions of the digital camera. Topics include detailed understanding of manual manipulation of shutter speeds and aperture settings, reading the light meter, ISO choice, etc. Assignments will be aligned with industry standards and professional expectations. Students will become very proficient in the usage of Adobe Photoshop CS3—the digital darkroom will be used for image manipulation and production and to archive photos for future use, and discover careers in related fields in Film, Television, Special Effects, Advertising, and many other Design and Entertainment related areas.

**Prerequisites:** TGP3M1

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PRINT AND GRAPHICS COMMUNICATION

Communications Technology: Print & Graphic Communications, Grade 11

**(YEARBOOK JOURNALISM PRODUCTION)**

**University/College, TGG3M1**

This course examines communications systems and design and production processes in the areas of graphic communications. Students will develop their creativity and technical skills through a variety of hands-on projects. Students will also study industry standards and regulations and health and safety issues, and will explore careers, the importance of lifelong learning, and the impact of communications technology on society and the environment. This course will emphasize Graphic Communications. Journalism, layout and design, graphic and photo manipulation and publishing are included in this course. This course will focus solely on the production of the **SCHOOL YEARBOOK**.

**Prerequisite:** None

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Communications Technology - Print & Graphic Communications, Grade 12

**(YEARBOOK JOURNALISM PRODUCTION)**

**University/College, TGG4M1**

This course further enhances communication systems, design and production processes in the areas of graphic communications. Students learn the guidelines of good journalism and the skills necessary for brainstorming, researching, reporting and publishing several types of stories: news, features, sports, etc. Students are ultimately responsible for publishing the Cardinal Carter Academy for the Arts yearbook. Each student is required to work on a class section in the annual and their own pages (clubs, student life, activities, etc.) as divided by the class. Students will learn yearbook organization, design, photography, interview techniques, copy writing, page designing, editing, indexing, and proofing as needed to complete their pages by the given deadline. Outside class time is usually required. Creativity, responsibility, and a strong grammar background are essential for the journalism student. Students will also study industry standards and regulations and health and safety issues, and will explore careers, the importance of lifelong learning, and the impact of communications technology on society and the environment.

**Prerequisite:** TGG3M1

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Communications Technology: New Media & Animation Grade 11
(3D Animation)

University/College, TGI3M1

In this introductory course to animation you will learn modelling basics and examine in depth the concepts, methods, and tools of polygonal modelling and NURBS (Non-uniform rational B-spline) modelling in 3D. Students new to 3D modeling become acquainted with the basic terms of 3D modelling and components, three dimensional modelling concept, and user interface. Based on this foundation of knowledge, students proceed to experimenting with modelling using NURBS surfaces. Applying this geometry type, students create curves and surfaces to build up their models. Meanwhile, the class provides an overview of Softimage XSI’s powerful spline modelling system and introduces some important basic concepts to help students get the most out of modeling with Softimage XSI. This class also covers modelling using polygons and polygon Edit Menu items to create, edit, texture, and fine-tune animation work embodying advanced 3D modeling techniques in their term projects which will be edited using Adobe CS (audio & video editing) and submitted on DVD to be premiered at a mutually agreed upon date with the teacher.

Prerequisite: None
Recommended: TEJ2O1

Communications Technology: New Media & Animation, Grade 12
(3D Animation)

University/College, TGI4M1

This is an advanced animation course designed for experienced animation students who are well versed in concepts and technical basics of Softimage XSI. The course challenges students to embark on animation projects that allow them more discretion regarding theme, topic, tools, and techniques employed. The course studies culminate in a short animated piece that embodies advanced animation designs and techniques. Students should enter the class with a solid understanding of animation concepts and a good grasp of basic skills for creative animation design. To accommodate the students’ desire to further their skills, the course introduces more sophisticated techniques at every stage of animation development and guides students to incorporate them into their course projects. Included in these advanced techniques are hierarchical animation, time curves and motion paths, color and light animation, advanced rendering techniques, audio/visual synchronization, and procedural descriptions of natural phenomena, etc. Students are required to complete a full-blown animated piece employing one or more such advanced techniques.

Prerequisite: TGI3M1