



Course Calendar

Grade 9

Visual Arts, AVI10, Open

This course offers an overview of visual arts as a foundation for further study. Students will become familiar with the elements and principles of design and the expressive qualities of various materials through working with a range of materials, processes, techniques, and styles. They will learn and use methods of analysis and criticism and will study the characteristics of particular historical art periods and a selection of Canadian art and the art of other cultures.

Introduction to Business, BBI10/BBI20, Open

This course introduces students to the world of business, including the concepts, functions, and skills required for meeting the challenges of operating a business in the twenty-first century on a local, national, and/or international scale. Students will learn concepts and skills related to personal finance, entrepreneurship and international business.

Geography of Canada, CGC1D, Academic

This course draws on a variety of frameworks, such as the ecozone framework, and principles of physical, human, and economic geography, to explore Canada's distinct and evolving character. Students will investigate the interconnections among the landforms, climate, soils, plants, animals, and human activities in Canadian ecozones to develop geographic knowledge and skills that contribute to an understanding of Canada's diversity and its role in the world.

English, ENG1D, Academic

Students develop an understanding of the conventions of narrative literature and language. Students read and study a range of short narratives, including short stories, novellas, narrative poetry, myths, legends, short animated films, and short feature films. They apply appropriate strategies to read, understand, and interpret narrative texts. Students use their knowledge of the elements of the narrative, such as plot, character, setting, conflict, theme, and mood to understand and interpret narrative texts. Students demonstrate their understanding of narrative by recording their thoughts, ideas, and feelings in a variety of personal and interactive responses and by creating and sharing their own narratives. Students write descriptive and expository paragraphs, thereby providing a foundation for writing the five-paragraph essay. Ongoing personal reading and writing are essential for students to develop mature communication skills.

Core French, FSF1D, Academic

This course emphasizes the further development of oral communication, reading, and writing skills. Students build on and apply their knowledge of French while exploring a variety of themes, such as relationships, trends and careers. Thematic readings, which include a selection of short stories, articles and poems, serve as stepping stones to oral and written activities.

Prerequisite: Minimum of 600 hours of French instruction, or equivalent

Learning Strategies 1: Skills for Success in Secondary School, GLS10, Open

This course explores learning strategies and helps students become better, more independent learners while increasing their personal management skills, both in school and in other contexts. Students will learn how to develop and apply a range of strategies to improve their learning and achievement, particularly their literacy, numeracy, communication, and planning skills. This course will increase students' confidence, motivation, and ability to learn.

Principles of Mathematics, MPM1D, Academic

This course enables students to develop generalizations of mathematical ideas and methods through the exploration of applications, the effective use of technology, and abstract reasoning. Students will investigate relationships to develop equations of straight lines in analytic geometry, explore relationships between volume and surface area of objects in measurement, and apply extended numeric and algebraic skills in problem solving. Students will engage in abstract extensions of core learning that will deepen their mathematical knowledge and enrich their understanding.

This grade nine mathematics course is designed to develop students' proficiency as learners and thinkers in mathematics, and their ability to apply mathematics in their daily lives. Students will interpret, analyze, and create mathematical models to solve realistic problems, within and beyond the mathematics classroom.

Healthy Active Living Education, PPL10, Open

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.

Science, SNC1D, Academic

This course enables students to understand basic concepts in biology, chemistry, earth and space science, and physics to develop skills in the processes of scientific inquiry and to relate science to technology, society and the environment. Student learning will include scientific theory and investigations related to cell division and reproduction, atomic and molecular structures and properties of elements and compounds, the universe and space exploration, and the principles of electricity.

Grade 10

Introduction to Business, BBI10/BBI20, Open

This course introduces students to the world of business, including the concepts, functions, and skills required for meeting the challenges of operating a business in the twenty-first century on a local, national, and/or international scale. Students will learn concepts and skills related to personal finance, entrepreneurship and international business.

Canadian History in the Twentieth Century, CHC2D, Academic

This course explores Canadian participation in global events and traces our development as a country through changes in population, economy, and technology. Students will analyse the elements that constitute Canadian identity, learn the stories of both individuals and communities, and study the evolution of political and social structures. Students will learn about differing interpretations of the past, and will come to understand the importance in historical studies of chronology and cause-and-effect relationships. They will also learn to develop and support a thesis, conduct research and analysis, and effectively communicate the results of their inquiries.

Civics, CHV2O, 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 and the meaning of democratic citizenship in local, national and global contexts. In addition, students will learn about social change, examine decision-making processes in Canada, explore their own and others' beliefs and perspectives on civics questions, and learn how to think and act critically and creatively about public issues.

English, ENG2D, Academic

The Grade 10 English course builds on the Grade 9 English course; it extends the range of analytic, reading, writing, oral communication, and thinking skills that students need for success in secondary school programs. In the Grade 10 Academic course students study and interpret challenging texts from contemporary and historical periods, including novels, poems, plays, and opinion pieces, and analyse and create effective media works. An important focus is the thoughtful use of spoken and written language.

Prerequisite: English, Academic, Grade 9

Core French, FSF2D, Academic

This course enables students to increase their knowledge of the French language, further develop their language skills and deepen their understanding and appreciation of francophone culture around the world. Exploring a variety of themes, students will develop and apply critical thinking skills in discussion, in their analysis and interpretation of texts, and in their own writing.

Prerequisites: minimum of 720 hours of French instruction or equivalent

Career Studies, GLC2O, Open

The purpose of the Career Studies course is to equip students to intelligently and purposefully interact with their world (now and in the future) so that they live, work, and participate in it as satisfied and contributing members of society. Student learning will include assessing their own knowledge, skills, and characteristics and investigating economic trends, workplace organization, work opportunities, and ways to search for work. The course explores post-secondary learning options, prepares students for community-

based learning, and helps them build the capabilities needed for managing work and life transitions. Students will design action plans for pursuing their goals.

Principles of Mathematics, MPM2D, Academic

This course enables students to broaden their understanding of relations, extend their skills in multi-step problem solving, and continue to develop their abilities in abstract reasoning. Students will model linear and quadratic relationships arising from a variety of contexts. Using trigonometric ratios and analytic geometry techniques, students will learn how to find exact measures in geometric contexts, as opposed to the approximate measures they have found using scale drawings and measurement tools. Geometric relationships investigated in Grade 9 will be confirmed, analytically, in specific cases, and students will be introduced to proof in general. Algebraic skills will be extended to generate factored, expanded, and completed square forms of quadratic expressions, and to solve linear systems and quadratic equations. Fundamental mathematical ideas of modelling, patterning, optimization, and superimposing a grid onto a geometric situation are reinforced. Connections among the various strands of the course are intentionally developed.

Prerequisite: Principles of Mathematics, Academic, Grade 9

Healthy Active Living Education, PPL2O, Open

This course emphasizes regular participation in a variety of enjoyable physical activities that promote lifelong healthy active living. Student learning will include the application of movement principles to refine skills; participation in a variety of activities that enhance personal competence, fitness, and health; examination of issues related to healthy sexuality, healthy eating, substance use and abuse; and the use of informed decision-making, conflict resolution, and social skills in making personal choices.

Science, SNC2D, Academic

This course enables students to develop a deeper understanding of concepts in biology, chemistry, earth and space science, and physics; to develop further their skills in scientific inquiry; and to understand the interrelationships among science, technology, and the environment. Students conduct investigations and understand scientific theories related to: ecology and the maintenance of ecosystems; chemical reactions, with particular attention to acid-base reactions; factors that influence weather systems; and motion.

Prerequisite: Science, Academic, Grade 9

Computer and Information Science, TIK2O, Open

This course introduces students to computer science concepts. Students will learn about the stages in software design; the fundamental programming constructs of sequence, selection, and repetition; the functions of internal and external computer components; the relationship among networks, operating systems, and application software and their uses; and how programming languages evolve. Students will also develop an awareness of computer-related careers.

Grade 11

Introduction to Financial Accounting, BAF3M, University/College Preparation

This course introduces students to the fundamental principles and procedures of accounting with emphasis on accounting procedures used in service and merchandising businesses. Students will develop an understanding of the connections between financial analysis, control and decision making in the management of a business, as well as the effects of technology and globalization on accounting procedures and the role of the accountant.

The Americas: Geographic Patterns and Issues, CGD3M, University/College Preparation

This course explores the growing interdependence of the Americas, from northern Canada to southern South America, through the study of geographic systems, patterns, and issues. Students use geographic methods and skills to investigate a wide range of topics, including natural systems, resource development, population patterns and trends, evolving trading blocs, and geopolitical partnerships.

American History, CHA3U, University Preparation

This course examines the development of American social, political, and economic structures from colonial times to the present. Students will analyse the chronology of events and evaluate the roles played by specific individuals and groups throughout American history. Students will conduct research and analysis, and communicate, in a variety of ways, their knowledge and understanding of the country that is Canada's closest neighbour and most important cultural influence and economic partner.

World History to the Sixteenth Century, CHW3M, University/College Preparation

This course investigates the history of humanity from earliest times to the sixteenth century. Students analyse diverse societies from around the world, with particular regard to the political, cultural, and economic structures and historical forces that form the foundation of the modern world. They examine the influence of selected individuals and groups, as well as of particular innovations, and develop skills of historical inquiry, organization, analysis, and communication.

Prerequisite: Canadian History in the Twentieth Century, Grade 10, Academic or Applied

The Individual and the Economy, CIE3M, University/College Preparation

This course explores economic concepts relating to the Canadian economic system, which will help students make informed decisions about how to use resources to satisfy wants and needs. Students use economic concepts and models, as well as methods of economic inquiry, to analyse the choices they make during their lives as consumers, contributors, and citizens in a mixed economy. The University/College Preparation course equips students with the knowledge and skills they need to meet the entrance requirements in specific programs offered at universities and colleges.

Prerequisite: Canadian History in the Twentieth Century, Grade 10, Applied or Academic

Understanding Canadian Law, CLU3M, University/College Preparation

This course explores legal issues that directly affect students' lives. To develop an appreciation of the Canadian legal system, students examine the historical roots of Canadian law and expand on their understanding of the role of government in making laws. Students also become familiar with the rights and freedoms that all Canadians enjoy as a result of the Canadian Charter of Rights and Freedoms. Students acquire a practical

knowledge of Canada's legal system, both criminal and civil, and learn how to analyse legal issues. They are given opportunities to develop informed opinions on legal issues and to defend those opinions and communicate legal knowledge in a variety of ways and settings, including legal research projects, and mock trials and debates.

Canadian Politics and Citizenship, CPC30, Open

This course explores the role of politics in people's lives. Students investigate the different ways in which individuals and groups can participate in the political process, examine the influence of citizen action on public policy, and assess the effectiveness of political systems and institutions in meeting people's needs and promoting the common good. In addition, students learn to distinguish between the legitimate and illegitimate exercise of power by individuals, groups, and governments.

Prerequisite: Canadian History in the Twentieth Century, Grade 10, Academic or Applied.

Media Studies, EMS30, Open

This course emphasizes knowledge and skills that 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 develop critical thinking skills, aesthetic and ethical judgement, and skills in viewing, representing, listening, speaking, reading, and writing.

English, ENG3U, University Preparation

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

Canadian Literature, ETC3M, University/College Preparation

This course emphasizes the study and analysis of Canadian writers for students with a special interest in Canadian Literature. Throughout the course, students study the themes, forms, and stylistic elements within a variety of texts representative of the various historical periods and the diverse cultures and regions of Canada. Students respond to the texts personally, critically, and creatively.

The course is structured around six units: short fiction, drama, the novel, children's literature, poetry, and the personal profile culminating unit. Each unit focuses on various themes and devices particular to the unit as well as those that relate to the Canadian experience as a whole. Media and non-fiction selections should be integrated throughout the course.

Prerequisite: English, Grade 10, Academic or Applied

Core French, FSF3U, University Preparation

This course draws on a variety of themes to promote extensive development of reading and writing skills and to reinforce oral communication skills. Students will gain a greater understanding of French-speaking cultures in Canada and around the world through their reading of a variety of materials, including a short novel or a play. Students will produce various written assignments, including a formal essay. The use of correct grammar and

appropriate language conventions in both spoken and written French will be emphasized throughout the course.

Prerequisite: Core French, Grade 10, Academic

World Religions: Beliefs, Issues, and Religious Traditions, HRT3M, University/College Preparation

This course enables students to discover what others believe and how they live and to appreciate their own unique heritage. Students learn about the teachings and traditions of a variety of religions, the connection between religion and the development of civilization, the place and function of religion in human experience, and the influence of a broad range of religions on contemporary society. This course also introduces students to skills used in researching and investigating world religions.

An Introduction to Anthropology, Psychology, and Sociology, HSP3M, University/College Preparation

This course introduces the theories, questions, and issues that are the major concern of anthropology, psychology, and sociology. Students develop an understanding of the way social scientists approach the topics they study and the research methods they employ. Students are given opportunities to explore theories from a variety of perspectives and to become familiar with current theories on a range of issues researched by classical and contemporary social scientists in the three disciplines.

Philosophy: The Big Questions, HZB30, Open

Philosophy: The Big Questions provides students with an opportunity to discuss some of the great questions of our age such as: What defines good music? What is art? Is beauty really in the eyes of the beholder? Should the Bicentennial man be considered a person? What makes your life meaningful? Students develop inquiry and critical analysis skills, enabling them to tackle these and many other questions. This course develops students' research and writing skills and assists them in becoming stronger logical thinkers. Philosophy: The Big Questions engages students' interest and challenges them to think about the world in a new light.

Computer and Information Science, ICS3M, University/College Preparation

This course helps students examine computer science concepts. Students will outline stages in software development, define standard control and data structures, identify on- and off-line resources, explain the functions of basic computer components, and develop programming and problem-solving skills by using operating systems and implementing defined practices. As well as identifying careers in computer science, students will develop an understanding of the ethical use of computers and the impact of emergent technologies on society.

Functions, MCR3U, University Preparation

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; investigate inverse functions; and develop facility in determining equivalent algebraic 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, MCF3M, University/College Preparation

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 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

Health for Life, PPZ3O, Open

This course helps students develop a personalized approach to healthy living. Students examine the factors that affect their own health and the health of individuals as members of the community. They learn about the components of the *Vitality* approach to healthy living – an initiative that promotes healthy eating, an active lifestyle, and a positive self-image. Throughout this course, students develop the skills necessary to take charge of and improve their own health, as well as to encourage others to lead healthy lives.

Biology, SBI3U, University Preparation

This course furthers students' understanding of the processes involved in biological systems. Students study the diversity of living things, cellular functions, the anatomy, growth, and functions of plants, internal systems and regulation, and genetic continuity. Throughout, the course provides cumulative evidence that all life forms, however diverse, are united by a common set of characteristics. 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

Chemistry, SCH3U, University Preparation

This course focuses on the concepts and theories that form the basis of modern chemistry. Students will study the behaviours of solids, liquids, gases, and solutions; investigate changes and relationships in chemical systems; and explore how chemistry is used in developing new products and processes that affect our lives and our environment. Emphasis will also be placed on the importance of chemistry in other branches of science. This profile offers one set of suggestions for achieving the learning expectations of the SCH3U. Teachers must adapt the profile to suit their circumstances and to match the students' needs while ensuring that all learning expectations of the course are addressed fully.

Prerequisite: Science, Grade 10, Academic

Science, SNC3M, University/College Preparation

This course explores relationships among Science, Technology, Society, and the Environment. Selected scientific and technological innovations - genetic modification of food and other food technologies, development of synthetic materials, habitation of space - are investigated to highlight contemporary issues including those related to waste management. The course concludes with personal research projects in which students apply knowledge and skills to explore phenomena, identify issues and propose solutions.

Physics, SPH3U, University Preparation

In this course students develop an understanding of the basic concepts of physics through

an analysis of the interrelationships between physics and technology, and a consideration of the impact of technological applications of physics on society and the environment. Students study the laws of dynamics and explore different kinds of forces, the quantification and forms of energy (mechanical, sound, light, thermal, and electrical), and the way energy is transformed and transmitted. They develop scientific-inquiry skills as they verify accepted laws and solve both assigned problems and those emerging from their investigations.

Prerequisite: Science, Grade 10, Academic

Grade 12

Principles of Financial Accounting, BAT4M, University/College Preparation

This course emphasizes study of accounting principles related to financial statements. Students learn about ways in which information in these statements is used in making business decisions, and about the effects on financial statements using different methods of inventory valuation and adjusting and reversing entries. Students also study various means of financing a business and ways in which the strength of a corporation can be determined by reading its annual report.

Prerequisite: Introduction to Financial Accounting, Grade 11, University/College Preparation

International Business Fundamentals, BBB4M, University/College Preparation

This course provides an overview of the importance of international business and trade in the global economy and explores the factors that influence success in international markets. Students will learn about the techniques and strategies associated with marketing, distribution, and managing international business effectively. This course prepares students for postsecondary programs in business, including international business, marketing, and management.

Business Leadership: Management Fundamentals, BOH4M, University/College Preparation

This course focuses on the development of leadership skills used in managing a successful business. Students will analyse the role of a leader in business, with a focus on decision making, management of group dynamics, workplace stress and conflict, motivation of employees, and planning. Effective business communication skills, ethics, and social responsibility are also emphasized.

World Geography: Human Patterns and Interactions, CGU4U, University Preparation

This course examines how cultures in different parts of the world interact with their environments and with each other. Students will use geographic concepts, methods, and tools to explore settlement patterns, human migration, cultural change, globalization, environmental issues, and other topics relevant to an understanding of how spatial, political, economic, and social factors affect settled environments and human activities.

Prerequisite: Any university or university/college preparation course in Canadian and world studies, English, or social sciences and humanities

Canadian and World Issues: A Geographic Analysis, CGW4U, University Preparation

This course draws on geographic concepts, skills, methods, and technologies to analyse significant issues facing Canadians as citizens of an interdependent world. Students will examine the challenges of creating a sustainable and equitable future through the study of a range of topics, including economic interdependence, geopolitical conflict, regional disparities in the ability to meet basic human needs, and protection of the planet's life-support systems.

Prerequisite: Any University or University/College Preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

World History: The West and the World, CHY4U, University Preparation

This course investigates the major trends in Western civilization and world history from the sixteenth century to the present. Students will learn about the interaction between the emerging West and other regions of the world and about the development of modern social,

political, and economic systems. The skills and knowledge developed in this course will enable students to understand and appreciate both the character of historical change and the historical roots of contemporary issues.

Prerequisite: Any university or university/college preparation course in Canadian and world studies, English, or social sciences and humanities

Analysing Current Economic Issues, CIA4U, University Preparation

This course explores the choices that individuals and societies make about the use of resources in a competitive global economy. Students will use economic concepts and models, as well as methods of economic inquiry to analyse current economic issues and make informed economic choices based on their analysis.

Prerequisite: Any University or University/College Preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

Canadian and International Law, CLN4U, University Preparation

This course explores elements of Canadian law and the role of law in social, political, and global contexts. Students will learn about the connections between the historical and philosophical sources of law and issues in contemporary society. They will also learn to analyse legal issues, conduct independent research, and communicate the results of their inquiries in a variety of ways.

Prerequisite: Any University or University/College Preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

Canadian and World Politics, CPW4U, University Preparation

This course examines national and international political issues from a variety of perspectives.

Students will learn about the rights and responsibilities of individuals, groups, and states within the international community; analyse the different ways in which Canada tries to settle its conflicts with other nations; and evaluate the role of nationalist and internationalist ideologies in shaping relations among states.

Prerequisite: Any University or University/College Preparation course in Canadian and World Studies, English, or Social Sciences and Humanities

English, ENG4U, University Preparation

This course emphasizes consolidation of literacy, critical thinking, and communication skills. Students will analyse a range of challenging texts from various time periods, countries, and cultures; write analytical and argumentative essays and a major paper for an independent research project; and apply key concepts to analyse media works. An important focus will be on understanding academic language and using it coherently and confidently in discussion and argument.

Prerequisite: English, ENG3U, Grade 11, University Preparation

The Writer's Craft, EWC4U, University Preparation

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

Core French, FSF4U, University Preparation

This course draws on a variety of themes to promote extensive development of French-language skills. Students will consolidate their oral skills as they discuss literature, culture, and current issues. They will read a variety of texts and will write a formal essay. The use of correct grammar and appropriate language conventions in both spoken and written French will be emphasized throughout the course.

Prerequisite: Core French, Grade 11, University Preparation

Individuals and Families in a Diverse Society, HHS4M, University/College Preparation

This course applies current theories and research from the disciplines of anthropology, psychology, and sociology to the study of individual development, family behaviour, intimate and parent-child relationships, and the ways in which families interact within the diverse Canadian society. Students will learn the interpersonal skills required to contribute to the well-being of families, and the investigative skills required to conduct and evaluate research about individuals and families.

Prerequisite: Any University, University/College, or College Preparation course in Social Sciences and Humanities, English, or Canadian and World Studies

Philosophy: Questions and Theories, HZT4U, University Preparation

This course addresses three (or more) of the main areas of philosophy: metaphysics, logic, epistemology, ethics, social and political philosophy, and aesthetics. Students will learn critical-thinking skills, the main ideas expressed by philosophers from a variety of the world's traditions, how to develop and explain their own philosophical ideas, and how to apply those ideas to contemporary social issues and personal experiences. The course will also help students refine skills used in researching and investigating topics in philosophy.

Prerequisite: Any university or university/college preparation course in social sciences and humanities, English, or Canadian and world studies

Computer and Information Science, ICS4M, University/College Preparation

This course helps students use programming and software engineering principles to design and develop algorithms and programs. Students will use software development and diagnostic tools, implement data structures and algorithms, and use file management techniques in project settings. They will also develop an understanding of the ethics of computer use and the impact of information technology on the community, and will explore postsecondary education and career paths in computer science.

Classical Civilization, LVV4U, University Preparation

This course allows students to explore the beliefs and achievements of the classical world, which have shaped Western thought and civilization. Students will investigate such aspects of classical culture as its mythology, art, literature, and philosophy, as well as elements of ancient Greek and Latin, through a variety of activities such as dramatizations, audio-visual presentations, and discussions. By reading classical authors in English and examining archaeological evidence, students will enhance both their communication skills and their ability to think critically and creatively.

Prerequisite: English, Grade 10, Academic or Applied

College and Apprenticeship Mathematics, MAP4C, College Preparation

This course equips students with the mathematical knowledge and skills they will need in many college programs. Students will use statistical methods to analyse problems; solve problems involving the application of principles of geometry and measurement to the design and construction of physical models; solve problems involving trigonometry in triangles; and

consolidate their skills in analysing and interpreting mathematical models.

Prerequisite: Mathematics of Personal Finance, Grade 11, College Preparation, or Functions, Grade 11, University/College Preparation, (or Functions and Relations, Grade 11, University Preparation)

Advanced Functions, MHF4U, University Preparation

This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; develop techniques for combining 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 taking the Calculus and Vectors course as a prerequisite for a university program 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

Calculus and Vectors, MCV4U, University Preparation

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, sinusoidal, exponential, rational, and radical functions; and apply these concepts and skills to the modelling 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 choose to pursue careers in fields such as science, engineering, economics, and some areas of business, including those students who will be required to take a university-level calculus, linear algebra, or physics course.

Note: The new Advanced Functions course (MHF4U) must be taken prior to or concurrently with Calculus and Vectors (MCV4U).

Mathematics of Data Management, MDM4U, University Preparation

This course broadens students' understanding of mathematics as it relates to managing information. Students will apply methods for organizing large amounts of information; apply counting techniques, probability, and statistics in modeling and solving problems; and carry out a culminating project that integrates the expectations of the course and encourages perseverance and independence. Students planning to pursue university programs in business, the social sciences, or the humanities will find this course of particular interest.

Prerequisite: Functions, Grade 11, University/College Preparation (MCF3M) or Functions and Relations, Grade 11, University Preparation (MCR3U)

Biology, SBI4U, University Preparation

This course provides students with the opportunity for in-depth study of the concepts and processes associated with biological systems. Students will study and conduct investigations in the area of metabolic processes, molecular genetics, homeostasis, evolution, and population dynamics. Emphasis will be placed on achievement of the detailed knowledge and refined skills needed for further study in various branches of the life sciences and related fields.

Prerequisite: Biology, SBI3U Grade 11, University Preparation

Chemistry, SCH4U, University Preparation

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, energy changes and rates of reaction, chemical systems and equilibrium, electrochemistry, and atomic and molecular structure. Students will further develop problem-solving and laboratory skills as they investigate chemical processes, at the same time refining their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in daily life, and on evaluating the impact of chemical technology on the environment.

Prerequisite: Chemistry SCH3U, Grade 11, University Preparation

Earth and Space Science, SES4U, University Preparation

This course focuses on the Earth as a planet, and on the basic concepts and theories of Earth science and their relevance to everyday life. Students will examine the Earth's place in the solar system and, after a general introduction to Earth science, will explore in more detail the materials of the Earth, its internal and surficial processes, and its history. The course draws on astronomy, biology, chemistry, mathematics, and physics in its consideration of geological processes that can be observed directly or inferred from other evidence.

Prerequisite: Science, Grade 10, Academic

Physics, SPH4U, University Preparation

This course enables students to deepen their understanding of the concepts and theories of physics. Students will explore further the laws of dynamics and energy transformations, and will investigate electrical, gravitational, and magnetic fields; electromagnetic radiation; and the interface between energy and matter. They will further develop inquiry skills, learning, for example, how the interpretation of experimental data can provide indirect evidence to support the development of a scientific model. Students will also consider the impact on society and the environment of technological applications of physics.

Prerequisite: Physics, Grade 11, University Preparation