Area of Interest: Advanced Technology

Bachelor of Technology (Business Systems Development) (Honours) (Co-op)

Honours Degree   Program Code: 6520X03FWO

4 Years

Ottawa Campus

Our Program

Today`s global business environment requires students that have developed the ability to become technology professionals capable of creating and implementing information and communications technology solutions to achieve competitive advantages, productivity gains, and innovation. The four-year Bachelor of Technology (Business Systems Development) (Honours) program prepares students for a career in business software systems development and technology management by providing skills and competencies in two closely related disciplines, technology and business. Our program curriculum provides the necessary key knowledge in software development and business technology management required by business and offers students the opportunity to use, develop, and research emerging business technologies such as mobile and wearable computing, artificial intelligence and agent technologies.

Students gain practical experience in technology project management, systems analysis and design, software development and implementation, data analysis, database technologies, operating systems, web applications and information security. When combined with knowledge of business principles, economics, accounting, internal audit and human resource management, students develop a unique skill set critical for strategic information and communications technology development environments.

Students also gain real-world experience through a paid co-operative education (co-op) work term (s) (see Additional Information for more details). Please note that places in the co-op work term(s) are subject to availability and academic eligibility. **Please note that admission to a co-op program does not guarantee a co-op placement.**

Graduates have a unique blend of applied knowledge and skills in core competencies in software development and business, including the project management book of knowledge (PMBOK) and the business analysis book of knowledge (BABOK). Students gain significant hands-on experience through online, in-class, simulation-based learning experiences and experiential learning activities such as co-op work terms and interdisciplinary final year team-based projects. The combination of knowledge, skills and experience allows students to integrate quickly into the complex global technology and business workforce in entry level information communications technology positions.

The Bachelor of Technology (Business Systems Development) (Honours) program is aligned with the learning outcomes and competencies published by the Business Technology Management (BTM) standards. Algonquin College has initiated the accreditation process with BTM.

SUCCESS FACTORS

This program is well suited for students who:

- Possess strong analytical, logical, critical-thinking and interpersonal skills.

- Succeed working independently and collaboratively in problem-solving teams.

- Are interested in working in diverse situations spanning business, and technology.

- Enjoy working with computers, mobile devices and up-to-date technology.

- Appreciate working in a creative environment, and challenging their beliefs through exposure

- Appreciate working in a creative environment, and challenging their beliefs through exposure to a diversity of opinions.

Employment

Graduates may find employment in municipal, provincial and federal government as well as within the private sector as business systems solution providers. Opportunities include employment as business systems analysts, systems designers, database analysts, database developers, business IT project managers, software developers, programmers and internal IT audit.

With the BTM alignment, graduates become cross discipline savvy, able to bridge technology and business being able to seek employment in entry level business positions.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Analyze, design, develop, implement and maintain business systems and/or components to support strategic business requirements.

- Manage the process of evaluating, selecting and using business systems.

- Develop and improve business systems by applying accepted methodologies, theories, concepts and practices.

- Manage data using appropriate methodologies and standards to improve business processes and decision-making.

- Apply the Project Management Institute`s Body of Knowledge to business systems software engineering projects.

- Apply security principles and practices in systems development and the systems environment.

- Apply principles and skills of business management, leadership and change management in the context of business systems software engineering.

- Apply quality assurance and quality management principles to business systems development projects.

- Educate a diversity of clients in the use of business technology to support, promote and improve business processes.

- Apply business technology management skills to innovate in business systems development targeting new and existing local and global markets.

- Adhere to professional, ethical and legal codes and standards.

- Conduct and evaluate research to contribute to evidence-based practice in business systems development.

- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

- Leverage artificial intelligence and agent technologies to support short and long term business decisions.

Program of Study

Level: 01	Courses	Hours
CST3100	Introduction to Computer Programming	70.0
CST3101	Database Design Fundamentals	56.0

ENL1100	Communications and Academic Writing	42.0
MAT8003	Mathematics for Programming	42.0
MGT4102	Business Fundamentals	42.0
Level: 02	**Courses**	**Hours**
ACC4101	Financial Accounting	42.0
CST3102	Programming	70.0
CST3103	Data Communication and Networking	42.0
PHI1000	Logic and Critical Thinking	56.0
QUA2000	Statistics	42.0
Level: 03	**Courses**	**Hours**
CST3104	Introduction to Mobile Application Development	56.0
CST3105	Advanced Database Design and SQL	56.0
CST3106	Internet Architecture and Web Development	56.0
CST3107	Operating Systems	42.0
ESC4300	Operations and Supply Chain Management	42.0
GEP1001	Cooperative Education and Job Readiness	21.0
MGT4701	Advanced Business Statistics	42.0
Level: 04	**Courses**	**Hours**
ACC4201	Managerial Accounting	42.0
BUS0008	Business Analytics and Advanced Business Intelligence	56.0
CST3108	Data Structures and Algorithms	56.0
CST3109	Business Systems Requirements Analysis	42.0
ECO4201	Macroeconomics	42.0
ESC4503	Technology Integration Using SAP	42.0
Co-op: 01	**Courses**	**Hours**
WKT0028	Co-Op Work Term 1	
Level: 05	**Courses**	**Hours**
BUS0007	Strategic Business Intelligence	56.0
CST3110	Enterprise Architecture	42.0
CST3111	Project Management for IT	42.0
CST3112	Business Systems Design and Implementation	56.0
Elective: choose 1	**Courses**	**Hours**

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BIO2200	Botany	56.0
ECO2000	Environmental Economics	42.0
ENL2025	Interpersonal Communication	42.0
FLS3101	French as a Second Language-Beginner 1	42.0
FLS3102	French as a Second Language-Beginner 2	42.0
GED2300	Indigenous Self-Representation in Contemporary Canadian Culture	42.0
LAW2014	Law	42.0
PHI2002	Ethical Decision Making	42.0
PSI2000	Navigating Canada's Political Landscape	56.0
PSY2100	Introductory Psychology	42.0
SCI2000	Environmental Science	42.0
SOC2000	Introduction to Sociology	56.0
SOC2001	Anti-Racism: Theory and Practice	42.0
Co-op: 02	**Courses**	**Hours**
WKT0029	Co-Op Work Term 2	
Level: 06	**Courses**	**Hours**
BUS0009	Risk Management and Strategies	42.0
CST3113	Enterprise Application Development	56.0
CST3114	Professional Option I: Data Analytics	42.0
MGT0107	Business Technology Management	42.0
Elective: choose 1	**Courses**	**Hours**
BIO2200	Botany	56.0
ECO2000	Environmental Economics	42.0
ENL2025	Interpersonal Communication	42.0
FLS3101	French as a Second Language-Beginner 1	42.0
FLS3102	French as a Second Language-Beginner 2	42.0
GED2300	Indigenous Self-Representation in Contemporary Canadian Culture	42.0
GEO2300	Principles of Urban Planning	56.0
LAN3101	Spanish-Beginner 1	42.0
LAN3102	Spanish-Beginner 2	42.0
LAW2014	Law	42.0
PHI2002	Ethical Decision Making	42.0

PSI2000	Navigating Canada's Political Landscape	56.0
PSY2100	Introductory Psychology	42.0
SCI2000	Environmental Science	42.0
SOC2000	Introduction to Sociology	56.0
SOC2001	Anti-Racism: Theory and Practice	42.0
Co-op: 03	**Courses**	**Hours**
WKT0030	Co-Op Work Term 3	
Level: 07	**Courses**	**Hours**
BUS0010	Business Systems Security, Audit and Control	42.0
CST3115	Enterprise Mobile Application Development	56.0
CST3116	Project I	42.0
CST3119	Professional Option II: Wearable Computing	42.0
Elective: choose 2	**Courses**	**Hours**
CUL4000	Global Citizenship	42.0
ENL4016	World Literature	42.0
ENL4100	Creative Writing	42.0
ENL4200	New Worlds and Alternative Realities: Speculative Fiction	42.0
PHI4000	Philosophy and Popular Culture	42.0
PHI4003	The Philosophy of Love and Sex	42.0
PHI4004	Technology, Society and the Environment	42.0
PHI4100	Survival in the Information Age: Risk and the Media	42.0
PHY4000	Black Holes, Big Bangs and the Cosmos	42.0
SOC4000	Criminology	42.0
SOC4001	Global Perspectives	42.0
Level: 08	**Courses**	**Hours**
CST3117	Project II	42.0
CST3118	Business Software Agents and Artificial Intelligence	56.0
MGT6120	Entrepreneurship	42.0
Elective: choose 2	**Courses**	**Hours**
CUL4000	Global Citizenship	42.0
ENL4016	World Literature	42.0
ENL4100	Creative Writing	42.0

ENL4200	New Worlds and Alternative Realities: Speculative Fiction	42.0
PHI4000	Philosophy and Popular Culture	42.0
PHI4003	The Philosophy of Love and Sex	42.0
PHI4004	Technology, Society and the Environment	42.0
PHI4100	Survival in the Information Age: Risk and the Media	42.0
PHY4000	Black Holes, Big Bangs and the Cosmos	42.0
SOC4000	Criminology	42.0
SOC4001	Global Perspectives	42.0

Fees for the 2024/2025 Academic Year

Tuition and related ancillary fees for this program can be viewed by using the Tuition and Fees Estimator tool at https://www.algonquincollege.com/fee-estimator .

Further information on fees can be found by visiting the Registrar`s Office website at https://www.algonquincollege.com/ro .

Fees are subject to change.

Books and supplies cost approximately $1,000 per academic year.

Admission Requirements for the 2025/2026 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent.

- Mature students are applicants who have not achieved the Ontario Secondary School Diploma (OSSD) or its equivalent and who are at least 19 years of age on or before the commencement of the program in which they intend to enroll. Mature students applying for Degree programs satisfy College Eligibility by having demonstrated academic abilities equivalent to those of Ontario high school graduates, verified by successful completion of at least one full-time term at the post-secondary level (minimum five courses taken concurrently in an academic program of study).

Program Eligibility

- Six Grade 12 university (U) or university/college (M) courses with a minimum 65% average including:

- One Grade 12 U English course, with a minimum of 60%.

- One Grade 12 U Math course, with a minimum of 60%.

- Please note that mature students must meet the following subject-specific Program Eligibility requirements, either directly or through equivalencies:

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Application Information

BACHELOR OF TECHNOLOGY (BUSINESS SYSTEMS DEVELOPMENT) (HONOURS) (CO-OP) Program Code 6520X03FWO

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:

ontariocolleges.ca
60 Corporate Court
Guelph, Ontario N1G 5J3
1-888-892-2228

Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at https://www.ontariocolleges.ca/ .

Applications for Fall Term and Winter Term admission received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available.

International applicants please visit this link for application process information: https://algonquincollege.force.com/myACint/ .

For further information on the admissions process, contact:

Registrar`s Office
Algonquin College
1385 Woodroffe Ave
Ottawa, ON K2G 1V8
Telephone: 613-727-0002
Toll-free: 1-800-565-4723
TTY: 613-727-7766
Fax: 613-727-7632
Contact: https://www.algonquincollege.com/ro

Additional Information

Algonquin College has been granted consent by the Ministry of Colleges and Universities, to offer this applied degree for a seven year term starting July 2, 2019. The College shall ensure that all students admitted to the above-named program during the period of consent have the opportunity to complete the program within a reasonable timeframe.

CO-OP INFORMATION:
Co-operative education (Co-op) allows students to integrate their classroom learning with a real-world experience through paid work terms. Two academic terms prior to the cooperative education work term, students are required to actively participate in and successfully complete the self-directed co-op course, readiness activities and workshops.

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Students must actively conduct a guided, self-directed job search and are responsible for securing approved program-related paid co-op employment. Students compete for co-op positions alongside students from Algonquin College and other Canadian and international colleges and universities. Algonquin College`s Co-op Department provides assistance in developing co-op job opportunities and guides the overall process, but does not guarantee that a student will obtain employment in a co-op work term. Co-op students may be required to relocate to take part in the co-op employment opportunities available in their industry and must cover all associated expenses; e.g., travel, work permits, visa applications, accommodation and all other incurred expenses.

Co-op work terms are typically 14 weeks in duration and are completed during a term when students are not taking courses. For more information on your program`s co-op level(s), visit the courses tab on your program`s webpage.

International students enrolled in a co-op program are required by Immigration, Refugees and Citizenship Canada (IRCC) to have a valid Co-op/Internship Work Permit prior to commencing their work term. Without this document International students are not legally eligible to engage in work in Canada that is part of an academic program. The Co-op/Internship Work Permit does not authorize international students to work outside the requirements of their academic program.

For more information on co-op programs, the co-op work/study schedule, as well as general and program-specific co-op eligibility criteria, please visit https://www.algonquincollege.com/coop .

Completion of the total number of co-op work terms listed under the courses section on the program page are mandatory for graduation. Co-op students must make every effort to remain on schedule and participate in co-op work terms as planned. Students who fail to complete co-op work terms as scheduled may be required to take an unscheduled break in their studies, resulting in a delay in graduation in order to complete their co-op at a later date. Taking an unscheduled break in studies can impact an international student's immigration status, including, in most cases, the ability to work. International students are advised to consult with the International Education Centre to understand the potential implications of unscheduled breaks at https://www.algonquincollege.com/international/student-handouts/scheduled-unscheduled-breaks/ .

TRANSFER CREDIT RECOGNITION:
Applicants with degrees or degree level courses from Canadian institutions empowered to award degrees and from other degree granting institutions recognized by the Ontario Ministry of Colleges and Universities (MCU) will be assessed on a case-by-case basis. To receive a course credit, a minimum grade of C (65%) is required. Official transcripts and course descriptions/outlines must be presented with the application for credit recognition. Applicants with degrees or degree level courses from countries other than Canada or from postsecondary institutions not recognized by the MCU must have their degrees evaluated by a recognized Canadian public or private institution that specializes in the evaluation of international degree programs.

ADVANCED STANDING:
Graduates of related Ontario College Diploma or Ontario College Advanced Diploma programs may be eligible for advanced standing into the degree program. Please visit the degree program listing or speak to the Program Coordinator for more information and to confirm eligibility.

DEGREE ELECTIVE INFORMATION:
Students may choose from a variety of breadth courses. Courses from a range of disciplines are offered within the humanities, social sciences, sciences, global cultures and mathematics. Elective offerings vary from semester to semester.

INTERNATIONAL STUDENT INFORMATION:
International students are assessed individually. All candidates must have OSSD equivalencies and/or postsecondary equivalencies assessed by an appropriate body. Inquiries regarding eligibility of this nature should be directed specifically to Algonquin`s International Students` Office.

Contact Information

Program Coordinator(s)

- Reginald Dyer, mailto:dyerr@algonquincollege.com , 613-727-4723, ext. 5148

Course Descriptions

ACC4101 Financial Accounting

Generally accepted accounting principles are widely used as benchmarks throughout business. Students explore the role of financial accounting from a user perspective. Students also engage with the preparation, use and analysis of financial statements and concepts of accrual accounting, in the context of various forms of business organizations and internal control issues.

Prerequisite(s): none
Corerequisite(s):none

ACC4201 Managerial Accounting

Managerial accounting is the process of identifying, analyzing, recording and presenting financial information that is used for internal planning and control. Students explore the background, goals and methods of managerial accounting and its role in business planning, control and decision making. Students calculate product costing, variable costing, and product pricing, perform cost-volume-profit analysis, differential analysis, and prepare reports for budgeting and profit planning purposes.

Prerequisite(s): none
Corerequisite(s):none

BIO2200 Botany

Biologists with an interest in plant life may choose to specialize in botany. Beginning with the organic features of life, focusing on plants, students investigate the diversity of plant life and the basis for distinction amongst various species. With a deeper knowledge of plant structures and variability, students consider the impact of plants in the modern world, including human interactions such as food production, building materials and medicine.

Prerequisite(s): none
Corerequisite(s):none

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Prerequisite(s): none
Corerequisite(s):none

BUS0007 Strategic Business Intelligence

Business Intelligence (BI) allows organizations to leverage their ability to use available information in new and innovative ways that extend beyond the usual common approaches. As such, BI has proved to be an essential strategic resource for businesses. Students examine different types of analytics that enable managers to enhance their decision-making and increase opportunities for organizational competitive advantage. Special attention is given to BI strategy and management, emerging trends in BI, big data, SPSS and/or SAS, rendering and probability in the cloud, BI reports and OLAP cubes.

Prerequisite(s): CST3105
Corerequisite(s):none

BUS0008 Business Analytics and Advanced Business Intelligence

Business Intelligence systems are essential for collecting, storing, evaluating and analyzing information. Students study the principles related to designing, building and implementing a business intelligence (BI) system using a variety of technological tools. Topics include: data warehouse, SQL in relation to BI data manipulations, dimensional modeling, online analytic processing (OLAP), visualization tools dealing with high impact and low entry requirements, data mining, ETL (extract, transform, load) and dashboards.

Prerequisite(s): none
Corerequisite(s):none

BUS0009 Risk Management and Strategies

We live in an ever changing world where risk is part of day-to-day life. Both government and private sector strive to develop strategies to identify and manage risk. Students acquire the knowledge and skills needed to identify, assess, monitor, and limit risks using risk management strategies and principles. Topics include risk assessment and treatment, risk management principles and practices, and risk financing.

Prerequisite(s): none
Corerequisite(s):none

BUS0010 Business Systems Security, Audit and Control

As a result of the increasing concern for security of information, there is a growing demand for qualified auditors to perform security audits of large organizations' IT systems and infrastructure. Students examine and employ the principles and methodologies needed to plan and organize security audits and ensure compliance with enterprise security requirements. Curriculum is closely aligned with the industry-recognized Certified Information Systems Auditor's (CISA) requirements. Case studies, in-class discussions and learning activities focus on performing high level security audits.

Prerequisite(s): CST3110
Corerequisite(s):none

CST3100 Introduction to Computer Programming

The underlying technical core of business systems is an effective and efficient implementation of program code. Through technical introduction to the fundamentals of programming with Java, students develop concise, robust, and efficient code. Students examine the concepts of object-oriented programming and use pseudocode to provide a descriptive framework for algorithm development. Emphasis is on problem-solving and fundamental logic skills as well as documentation, both in-line and high-level, to underscore the importance of readability and maintainability. A key focus is top-down design, and effective testing and debugging techniques. To establish the necessary background, students learn to use an Integrated Development Environment (IDE), program development, implementation, and execution, as well as machine-level representation of data and common language control constructs.

Prerequisite(s): none
Corerequisite(s):none

CST3101 Database Design Fundamentals

Modern business systems rely on fast information storage, processing and retrieval for everyday operations and strategic decision-making. Storing data in well-structured and standard format is an important key towards achieving efficiency and speed. Throughout the course, students acquire a theoretical and practical understanding of database systems, types, design and applications. Course components consist of theoretical and hands-on design of databases based on industry standards, such as SQL. Industry case studies focus on data use, data security, cloud-based options, database design, implementation and normalization.

Prerequisite(s): none
Corerequisite(s):none

CST3102 Programming

The de facto development paradigm for mobile and enterprise systems is object based. This course explores the fundamentals of object-oriented design and programming. Students learn to create and manipulate reusable objects, encapsulate data and logic within a class, inherit one class from another and implement polymorphism and exception handling. Topics may include design

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patterns, Java APIs, J-Unit testing framework and graphical user interface fundamentals.

Prerequisite(s): CST3100 and MAT8003
Corerequisite(s):none

CST3103 Data Communication and Networking

Business decision-makers increasingly demand and rely on immediate access to accurate and secure information. Students examine the concepts, components, implementation and operation of computer networks in personal area networks, local area networks, wireless networks, wide area networks, and on the internet. Knowledge of the communication layers is examined using the OSI reference model and in particular the TCP/IP protocol suite and Ethernet. Students evaluate risks, network security, vulnerabilities and mitigation strategies. Guided by sound theoretical knowledge, students also examine materials from the Cisco Network Academy Program CCNA Exploration Networking Fundamentals, CompTIA Network+ Certification as well as analyze industry case studies.

Prerequisite(s): none
Corerequisite(s):none

CST3104 Introduction to Mobile Application Development

Mobile devices, such as smartphones and tablets, are omnipresent and have come to dominate the landscape of mobile computing. Students examine the foundations of programming mobile applications for the Android operating system using an Integrated Development Environment (IDE) and basic mobile programming concepts to build applications for the smartphone and tablet. Keys topics include object-oriented database APIs, animation, multi-threading, networking and performance considerations. Particular emphasis is on user interface design for mobile devices and user interactions using multi-touch technologies.

Prerequisite(s): CST3101 and CST3102 and CST3103
Corerequisite(s):none

CST3105 Advanced Database Design and SQL

Increasingly, businesses face challenges involved with handling volumes of large and complex data. The ability to effectively store, manage, access and communicate with databases requires practical knowledge of advanced database features. Students evaluate and apply methodologies for design, analysis, scalability and evaluation of database systems. Students gain advanced understanding and practical experience in SQL, PLSQL programming, advanced engineering modeling tools, rollup and cube operations, transaction control, and data warehousing, cloud-based database services and security.

Prerequisite(s): CST3101
Corerequisite(s):none

CST3106 Internet Architecture and Web Development

Internet-based services are a key foundation of e-Commerce systems. Students explore the infrastructure, both in terms of networking and services, of the Internet. Students review the classical client-server architecture, explore cloud-based services as well as the concepts of Service-Oriented-Architecture (SOA) and Software-as-a-Service (SaaS). By applying principles of graphical user interface design for both browser technology and mobile devices, students define structure and content of web pages through the use of markup and scripting languages. Special emphasis is on services that provide remote access to enterprise database systems.

Prerequisite(s): CST3102 and CST3103
Corerequisite(s):none

CST3107 Operating Systems

Operating systems come in different varieties, such as Windows, Unix, iOS, Android, etc., each with its own unique attributes, but all sharing several features in common. It is important to understand

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the common characteristics and functionality of operating systems. Students gain an understanding of the concepts and components of operating systems as well as how they interact and function with various hardware components. Course focus includes details of various operating system structures, access (to CPU and input/out devices, etc.), resources, processes and storage management, as well as control mechanisms. Students acquire knowledge of installation, basic security, configuration, administration and modifications through robust theoretical and hands-on assignments.

Prerequisite(s): none
Corerequisite(s):none

CST3108 Data Structures and Algorithms

Data structures and algorithms form the core of all practical computer science. Students explore a variety of important data structures and methods for implementation using experimental and analytical evaluation. Through reviewing the mathematical background and models of computation, complexity and asymptotic bounds and notation, students examine standard algorithmic paradigms. Topics may include simple recursive procedures, divide-and-conquer strategies, recursive backtracking, branch-and-bound and heuristics.

Prerequisite(s): CST3102 and MAT8003
Corerequisite(s):none

CST3109 Business Systems Requirements Analysis

Translating client requirements into system specifications is critical to successful end products and the starting point is requirements analysis. Students gain an understanding of the development life cycle and the concepts of requirements analysis, and their impact from inception to final product. Course components include best practices, software engineering principles and standards, usability and artifacts for modeling requirements analysis. Students research, analyze, develop and evaluate solutions. Topics may include: agile development, outsourcing, ethics, security and privacy, cloud services and in-house development.

Prerequisite(s): CST3102 and CST3103 and CST3105
Corerequisite(s):none

CST3110 Enterprise Architecture

In a strategic sense, enterprise system architects are key contributors of any business. Collaborating effectively at all levels within the organization is paramount. The ultimate goal of enterprise architecture is to align enterprise technology investment with business strategic planning. Students compare and contrast frameworks and methodologies used in guiding enterprise-level decisions. Through the use of case studies, students select and apply an appropriate process to support enterprise-level technology decisions used in building enterprise architecture.

Prerequisite(s): ACC4101 and BUS0008 and CST3109
Corerequisite(s):none

CST3111 Project Management for IT

The role of project management in information technology (IT) revolves around product development and implementation. The content has been closely aligned with the Project Management Institute's (PMIs) Project Management Body of Knowledge (PMBOK) concepts and methodologies. Topics include management issues re lated to planning, organization, scheduling, resource allocation and project monitoring and control. Students will also examine IT project management tools for effective project scheduling and management. Through relevant case studies, student projects and presentations, students develop skills and knowledge in relation to technology project management.

Prerequisite(s): CST3109
Corerequisite(s):none

CST3112 Business Systems Design and Implementation

Design and implementation follow requirements analysis, and often occupy a significant portion of the development process. Guided by software development industry standards and best practices, students gain solid theoretical and practical experience with the design and implementation steps by applying design techniques and creating design artifacts. Students investigate prototyping, testing, debugging and quality assurance aspects of the software engineering process. Real world case studies focus on successes and failures while emphasizing the importance of following industry best practices.

Prerequisite(s): CST3109
Corerequisite(s):none

CST3113 Enterprise Application Development

Enterprise applications are designed to integrate with other enterprise-level software applications used within a business or organization. Students learn the architecture of a corporate enterprise framework by examining, implementing and using technologies employed in the enterprise environment. Server-side topics include high-performance and scalable platforms (machine interconnects, parallelism, multithreading), integration, distributed applications, network programming and services. Client-side topics include mobile and web-app software, distributed system administration, and security requirements. Students acquire development experience in J2EE and mobile development.

Prerequisite(s): CST3102 and CST3103 and CST3105
Corerequisite(s):none

CST3114 Professional Option I: Data Analytics

Collecting and analyzing raw data to draw conclusions helps to guide organizations in the decision-making process. Students explore the statistical tools most commonly used to process, analyze and visualize data. Topics include simple linear regression, multiple regression, logistic regression and analysis of variance, with applications to data mining and machine learning. Using interactive statistical software, students examine the commonly used tools of data analytics with emphasis on interpretation of the analytical results and effective visualization. In each topic area, real world applications help is establishing context and an understanding of the fundamental concepts.

Prerequisite(s): CST3105 and MAT8003 and QUA2000
Corerequisite(s):none

CST3115 Enterprise Mobile Application Development

Enterprise mobile software offers tremendous opportunity for engagement, both by ensuring customers return to your server on a regular basis, and in being central touch-point for employees or partners. Students differentiate between external (customer) and internal (employee) users and their respective design requirements. Topics include multi-platform management tools, network security requirements to support mobile users, mobile Web versus native mobile development, application programming interface (API) design for accessing enterprise data sources as well as sophisticated graphic user interface (GUI) experiences for external and internal users. Emphasis is on security (information protection, identity, device tracking, etc.) and cover forward-looking topics such as increased capability for data capture (sensors, GPS, cameras). Using Java, students develop both server and client (mobile) system components.

Prerequisite(s): CST3104 and CST3106
Corerequisite(s):none

CST3116 Project I

In order to practice in a professional capacity, students must fully integrate business systems development skills and knowledge. Students gain real-world experience working on a project drawn from a broad range of areas within computer science, of scope and quality comparable to a commercial application. Under the supervision of a faculty member, students collaboratively apply research methods to produce a proposal document detailing the project background, novel contribution, deliverables and timelines. As a team, students present and defend the proposal

before beginning the development phase in the following semester. Prerequisite: All courses up to and including level 6.

Prerequisite(s): CST3111 and CST3113 and CST3114
Corerequisite(s):none

CST3117 Project II

Possessing practical and real-world experience in project execution is a necessity for entry into the field of business systems development. Students collaboratively develop and implement the project deliverable proposed previously. Students use acquired techniques and approaches to develop and evaluate designs, analyze algorithmic solutions, and implement, debug and test the final deliverable. The project involves substantial programming with particular attention paid to graphic user-interface design. Students write and submit a report that is combined with the proposal document. In a team-based collaborative environment, students present their project and demonstrate the newly developed system.

Prerequisite(s): CST3116
Corerequisite(s):none

CST3118 Business Software Agents and Artificial Intelligence

An agent is anything that can be viewed as perceiving its environment through sensors and acting upon that environment through actuators. A rational agent, more specifically, carries out an action with the best outcome after considering past and current percepts. Students examine the fundamentals of artificial intelligence (AI), and how AI can be used to create agents that act with precise business objectives. Topics include types of agents and types of environments, rationality, performance measures, actuators, and sensors. Real world examples include domains such as e-Commerce, e-Business, with applications to supply chain management, web-based services negotiation. Students design, implement and deploy agents in simulated environments.

Prerequisite(s): CST3114 and CST3115
Corerequisite(s):none

CST3119 Professional Option II: Wearable Computing

Wearable computers (WCs) are systems that typically comprise one or more body-mounted devices such as monitors or sensors, endowed with a mobile communication capability. WCs support a variety of applications including medical, lifestyle, consumer electronics and recreation. Students investigate various technologies through programming projects and hands-on experimentation with a selection of devices. Topics include Augmented Reality, GPS-based services, medical applications, user tracking for business and retail service, and gaming.

Prerequisite(s): CST3103 and CST3104
Corerequisite(s):none

CUL4000 Global Citizenship

Informed citizens in today's world appreciate the meaning of civic life at the local, national and global level. Students reflect on and develop a personal awareness of the meaning of freedoms, rights and obligations in a diverse global community and consider the political, social and economic drivers that influence patterns of human behaviour and the health of the planet. Based on general principles of global citizenship, students look beyond national borders to assess personal responsibilities related to the health and well-being of the planet and inhabitants. Students critically evaluate information related to environmental and social health, equipped with attitudes and behaviours that foster global environmental and social responsibility.

Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s):none

CUL4000 Global Citizenship

Informed citizens in today's world appreciate the meaning of civic life at the local, national and

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global level. Students reflect on and develop a personal awareness of the meaning of freedoms, rights and obligations in a diverse global community and consider the political, social and economic drivers that influence patterns of human behaviour and the health of the planet. Based on general principles of global citizenship, students look beyond national borders to assess personal responsibilities related to the health and well-being of the planet and inhabitants. Students critically evaluate information related to environmental and social health, equipped with attitudes and behaviours that foster global environmental and social responsibility.

Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s):none

ECO2000 Environmental Economics

Issues pertaining to the environment have a major financial impact on society and government. Environmental economics examines the way human decisions affect the quality of the environment, how human values and institutions shape our demands for improvements in the quality and about designing effective public policies to bring about these improvements. Students examine problems and solutions relating to environmental policy analysis in the Canadian context.

Prerequisite(s): none
Corerequisite(s):none

ECO2000 Environmental Economics

Issues pertaining to the environment have a major financial impact on society and government. Environmental economics examines the way human decisions affect the quality of the environment, how human values and institutions shape our demands for improvements in the quality and about designing effective public policies to bring about these improvements. Students examine problems and solutions relating to environmental policy analysis in the Canadian context.

Prerequisite(s): none
Corerequisite(s):none

ECO4201 Macroeconomics

Macroeconomics is a social science that examines the objectives and policies that affect the whole economy. Students explore the principles of macroeconomics using economic models to analyze the performance of the economy at an aggregate level. Through lectures and discussions, Students examine how the level of unemployment, inflation and national income are determined, investigate the impact that fiscal and monetary policies have on stabilizing the economy and analyze Canada's international economic relationships, including the international flows of goods and of capital.

Prerequisite(s): none
Corerequisite(s):none

ENL1100 Communications and Academic Writing

Effective communication is an integral component of success in the workplace and in lifelong learning. Students review communication theory and its connection to expository writing. Frequent writing exercises encourage the development of content that is coherent, well organized and correct. Students consider and use strategies to generate ideas, to collect and organize information, to acknowledge sources, to identify and develop a thesis and to adapt format, style and tone for different purposes and audiences.

Prerequisite(s): none
Corerequisite(s):none

ENL2025 Interpersonal Communication

Effectively communicating with others, both professionally and personally, is an art that requires conscious development. Students address the techniques related to interpersonal communication challenges in the diverse workplace. Focus is on communication barriers, verbal and non-verbal

communication, listening, team work, and relational dynamics. Through role play, analysis, and case studies, students engage in simulated and authentic interpersonal communication situations.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL2025 Interpersonal Communication

Effectively communicating with others, both professionally and personally, is an art that requires conscious development. Students address the techniques related to interpersonal communication challenges in the diverse workplace. Focus is on communication barriers, verbal and non-verbal communication, listening, team work, and relational dynamics. Through role play, analysis, and case studies, students engage in simulated and authentic interpersonal communication situations.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL4016 World Literature

Exposure to broad sources of literature promotes an open-minded perspective on today's global society and encourages an appreciation of diversity and human differences. In World Literature, students explore key literary works from around the world and examine the socio-historical and cultural contexts in which authors wrote and set these texts. Students learn to identify common themes and apply literary and cultural theory to these works towards expanding critical thinking skills and developing an analytical vocabulary. Through seminar presentations, group discussions, debates, journaling, and creative writing, students grapple with literary representations of social, political, and cultural issues from around the world, gaining an appreciation of what it means to be responsible global citizens and possess the ability to listen to, question, and value diverse perspectives.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL4016 World Literature

Exposure to broad sources of literature promotes an open-minded perspective on today's global society and encourages an appreciation of diversity and human differences. In World Literature, students explore key literary works from around the world and examine the socio-historical and cultural contexts in which authors wrote and set these texts. Students learn to identify common themes and apply literary and cultural theory to these works towards expanding critical thinking skills and developing an analytical vocabulary. Through seminar presentations, group discussions, debates, journaling, and creative writing, students grapple with literary representations of social, political, and cultural issues from around the world, gaining an appreciation of what it means to be responsible global citizens and possess the ability to listen to, question, and value diverse perspectives.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL4100 Creative Writing

Whether for personal or public consumption, many people enjoy writing short fiction to express their creative energy while improving upon their overall writing abilities. Working with professional short stories as models, students examine the stylistic components that contribute to the excitement, atmosphere, and overall readability of short fiction. Students share their work and provide formal feedback on the work of others.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL4100 Creative Writing

Whether for personal or public consumption, many people enjoy writing short fiction to express

their creative energy while improving upon their overall writing abilities. Working with professional short stories as models, students examine the stylistic components that contribute to the excitement, atmosphere, and overall readability of short fiction. Students share their work and provide formal feedback on the work of others.

Prerequisite(s): ENL1100
Corerequisite(s):none

ENL4200 New Worlds and Alternative Realities: Speculative Fiction

Speculative fiction gathers together all those works of fiction in which new worlds or alternative realities are envisioned. Within this category of prose, students have the opportunity to explore the various sub-genres that present readers with new ways of thinking about some of the issues that face society. Students also develop skills in critical analysis using a variety of approaches and methodologies from literary studies.

Prerequisite(s): none
Corerequisite(s):none

ESC4300 Operations and Supply Chain Management

From a planning point of view, the need to balance demand and supply is paramount in today's business world. The basic concepts to manage a supply chain are covered from suppliers to customers. Students focus on production planning, master scheduling, MRP, capacity management, forecasting, purchasing, inventory management, and physical distribution, among other topics.

Prerequisite(s): none
Corerequisite(s):none

ESC4503 Technology Integration Using SAP

In the continuously evolving business world, there is a need for a solid framework for enterprise technology integration in business organizations, business processes and business tactical and strategic decision making. Students acquire the fundamental skills needed to start creating programs that will examine business reporting processes using SAP including NetWeaver, Business Warehouse (BW), Business Intelligence (BI) and Advanced Business Application Programming (ABAP). Through workshops and hands on learning, students build business report interfaces, write ABAP code to filter and drill down into business databases to support business decisions.

Prerequisite(s): CST4301 and CST4401
Corerequisite(s):none

FLS3101 French as a Second Language-Beginner 1

The French language is an asset when communicating in the workplace. Students with no prior knowledge of French acquire basic forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples support students to gain basic oral expression and comprehension using simple phrases that develop vocabulary, pronunciation, and comprehension. Students begin to appreciate cultural and linguistic differences when French is used in the workplace.

Prerequisite(s): none

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Corerequisite(s):none

FLS3101 French as a Second Language-Beginner 1

The French language is an asset when communicating in the workplace. Students with no prior knowledge of French acquire basic forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples support students to gain basic oral expression and comprehension using simple phrases that develop vocabulary, pronunciation, and comprehension. Students begin to appreciate cultural and linguistic differences when French is used in the workplace.

Prerequisite(s): none
Corerequisite(s):none

FLS3102 French as a Second Language-Beginner 2

The workplace benefits from having professionals with knowledge of the French language. Students with basic knowledge of French gain more control over forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of French in the workplace.

Prerequisite(s): none
Corerequisite(s):none

FLS3102 French as a Second Language-Beginner 2

The workplace benefits from having professionals with knowledge of the French language. Students with basic knowledge of French gain more control over forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of French in the workplace.

Prerequisite(s): none
Corerequisite(s):none

GED2300 Indigenous Self-Representation in Contemporary Canadian Culture

Historically, Indigenous peoples and their cultures have been dramatically misrepresented and stereotyped in Canadian literature, music, visual arts, film, and television as a result of ongoing attempts to colonize, marginalize, romanticize, and assimilate them. Starting with an historical overview of the oppressive act of misrepresenting, appropriating, and stereotyping Indigenous peoples and their cultures in Canada, students explore how contemporary Indigenous artists have responded to these misrepresentations by subverting, critiquing, challenging, and changing the representations of Indigenous peoples and their cultures in their own artistic works. Significant works of contemporary literature, music, visual arts, film, and television created by contemporary Indigenous artists who give voice to their experiences in Canada serve as the basis for critical analysis and creative reflection on the processes of self-representation and cultural reclamation of Indigenous voices and identity in Canada.

Prerequisite(s): none
Corerequisite(s):none

GED2300 Indigenous Self-Representation in Contemporary Canadian Culture

Historically, Indigenous peoples and their cultures have been dramatically misrepresented and stereotyped in Canadian literature, music, visual arts, film, and television as a result of ongoing attempts to colonize, marginalize, romanticize, and assimilate them. Starting with an historical overview of the oppressive act of misrepresenting, appropriating, and stereotyping Indigenous

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peoples and their cultures in Canada, students explore how contemporary Indigenous artists have responded to these misrepresentations by subverting, critiquing, challenging, and changing the representations of Indigenous peoples and their cultures in their own artistic works. Significant works of contemporary literature, music, visual arts, film, and television created by contemporary Indigenous artists who give voice to their experiences in Canada serve as the basis for critical analysis and creative reflection on the processes of self-representation and cultural reclamation of Indigenous voices and identity in Canada.

Prerequisite(s): none
Corerequisite(s):none

GEO2300 Principles of Urban Planning

Increasingly cities and communities are feeling the pressure of expansion, and people from all walks of life feel disconnected from the processes, procedures, and decisions that are affecting everyday life. Students consider urban transformation with a focus on practicing sustainability by exploring innovations in land use, transportation, resource planning and economic development, resulting in employment opportunities, as well as healthy and vibrant cities. Students use local and regional activities as a starting point for developing a knowledge base for future social and community involvement. Research projects and assignments encourage students to identify the gaps between theoretical approaches to urban planning and the practical applications as evidenced in their local surroundings.

Prerequisite(s): none
Corerequisite(s):none

GEP1001 Cooperative Education and Job Readiness

Students are guided through a series of activities that prepare them to conduct a professional job search and succeed in the workplace. Through a detailed orientation students learn the cooperative education program policies and procedures related to searching and securing a work term opportunity. Students identify their strengths and transferable skills and participate in workshop-style sessions that focus on cover letter and resume development, interview techniques and job search strategies. Students learn how to navigate a web-based resource centre, which is used to post employment and cooperative education job opportunities. Students reflect on workplace success, ethics and responsibilities.

Prerequisite(s): none
Corerequisite(s):none

LAN3101 Spanish-Beginner 1

The Spanish language is an asset when communicating in the workplace. Students with no prior knowledge of Spanish acquire basic forms and structures to interact and communicate in a simple way with Spanish speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples support students to gain basic oral expression and comprehension using simple phrases that develop vocabulary, pronunciation, and comprehension. Students begin to appreciate cultural and linguistic differences when Spanish is used in the workplace.

Prerequisite(s): none
Corerequisite(s):none

LAN3102 Spanish-Beginner 2

The workplace benefits from having professionals with knowledge of the Spanish language. Students with basic knowledge of Spanish gain more control over forms and structures to interact and communicate in a simple way with Spanish speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of Spanish in the workplace.

Prerequisite(s): none
Corerequisite(s):none

LAW2014 Law

The reach of the rule of law extends into our lives on a daily basis. As much as it is present in our lives, very few people are aware of the processes, procedures and theories that guide and underpin the development and maintenance of a functional legal system. With attention to key historical figures and events, students explore the scope, jurisdiction, and key concepts of the sub-disciplines within the field of law. Through an introduction to legal arguments and methodologies, students distinguish between various legal systems and wrestle with the difference between law and justice.

Prerequisite(s): none
Corerequisite(s):none

MAT8003 Mathematics for Programming

The core foundation of all computer science is mathematics. Students examine elementary discrete mathematics for computer science, knowledge that forms the basis of algorithm and data structure efficiency analysis. Emphasis is on mathematical definitions, proofs, and applicable methods. The topics include formal logic notation, boolean logic, simple logic gates, proof methods, induction, well-ordering, sets, relations, elementary graph theory, integer congruences, asymptotic notation and growth of functions, permutations and combinations, counting principles, discrete probability, linear algebra and matrix theory.

Prerequisite(s): none
Corerequisite(s):none

MGT0107 Business Technology Management

Government and private sector organizations continuously undergo major transformation with respect to technology. Technology is a major enabler of these transformation initiatives. As a result, there is a growing need for professionals that can leverage technology to enable organizations to achieve strategic goals. These professionals possess the ability to bridge the gap between business and technology. Students develop business skills and understand the importance of aligning information technology to the business' objectives. Special attention is on discussing planning, decision-making, trends, alignment, optimization, processes and timing.

Prerequisite(s): BUS0007
Corerequisite(s):none

MGT4102 Business Fundamentals

In today's growing global economy, organizations are facing many new, diverse and competing challenges that have significant impact on their organizations. Students discover the essential management concepts of planning, organizing, leading and controlling. Other topics include human resources, strategy, decision making, ethics and social responsibility as well as organizational culture and change. Students apply various theoretical frameworks utilizing tools including case methodology, terms and discussions.

Prerequisite(s): none

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Corerequisite(s):none

MGT4701 Advanced Business Statistics

With the unprecedented amount of data available, business analytics has become increasingly important in delivering value to businesses and changed the way organizations make decisions and run their operations. Building on the foundations of statistics, the areas of focus are design of experiments, analysis of variance, correlation, regression analysis, decision theory and time series forecasting.

Prerequisite(s): MGT4401 or QUA2000
Corerequisite(s):none

MGT6120 Entrepreneurship

Entrepreneurship is an important facet in expanding business opportunities. Students identify, research, and evaluate current and emerging trends in business. Students investigate organizational structures and develop financial, operating, and marketing management strategies to support a business case. Through the development, presentation and reflection on business plans, students practice and develop entrepreneurial skills.

Prerequisite(s): none
Corerequisite(s):none

PHI1000 Logic and Critical Thinking

Logic and critical-thinking skills play an important role in both daily life and ongoing academic studies. As foundational skills, they support both the development and assessment of ideas, concepts and courses of action that are presented on a daily basis. Approaching the subject from both a practical and theoretical perspective, students hone their skills in analysis, argumentation, reasoning and persuasion. A range of topics and thinkers provide material with which students can exercise and apply their skills.

Prerequisite(s): none
Corerequisite(s):none

PHI2002 Ethical Decision Making

To avoid potential prosecution, companies and their employees are well-advised to engage in ethical decision-making practices in all business situations. Students examine ethical concepts and principles, compare a variety of ethical decision-making models and utilize these principles and models to make ethically sound decisions in a variety of contexts. Students also design a code of ethics, practice making ethically- based decisions and develop the analytical skills required to recognize, evaluate and resolve ethical dilemmas in the workplace.

Prerequisite(s): PHI1000
Corerequisite(s):none

PHI4000 Philosophy and Popular Culture

Many facets of today's popular culture engage, directly or indirectly, with the concerns of a variety of philosophical traditions. Drawing on a number of examples, students explore both the way popular culture permeates and spreads through society and the way it interprets and presents philosophical questions. Students develop skills and techniques for assessing the soundness and validity of thought experiments.

Prerequisite(s): PHI1000
Corerequisite(s):none

PHI4000 Philosophy and Popular Culture

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Prerequisite(s): PHI1000
Corerequisite(s):none

PHI4003 The Philosophy of Love and Sex

Love and sex are central to the human condition, and have been topics of academic inquiry and controversy throughout history. Various practices surrounding love and sex are celebrated in Western culture, such as monogamy and marriage, while other practices, such as polygamy and pedophilia, are condemned. Why is this? Students critically explore these and other issues surrounding love and sex using examples from popular music, movies and literature, framing those issues with the help of historical and contemporary philosophical theories and arguments. Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corerequisite(s):none

PHI4004 Technology, Society and the Environment

Environmental issues have come to occupy a central place in the marketplace, politics, policy, and society at large. Owing largely to the many environmental consequences that have accompanied industrialization, we humans have been forced to rethink the complex relationship between technology, society and the environment. Students investigate philosophical concepts and theories surrounding technology, society and the environment including: the "naturalness" of technology, sustainability and animal rights. Students critically examine course material by focusing on questions such as: What is nature, and what role do/should humans occupy in it? What do we owe non-human organisms? What do we owe future generations? Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corerequisite(s):none

PHI4004 Technology, Society and the Environment

Environmental issues have come to occupy a central place in the marketplace, politics, policy, and society at large. Owing largely to the many environmental consequences that have accompanied industrialization, we humans have been forced to rethink the complex relationship between technology, society and the environment. Students investigate philosophical concepts and theories surrounding technology, society and the environment including: the "naturalness" of technology, sustainability and animal rights. Students critically examine course material by focusing on questions such as: What is nature, and what role do/should humans occupy in it? What do we owe non-human organisms? What do we owe future generations? Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corerequisite(s):none

PHI4100 Survival in the Information Age: Risk and the Media

On an almost daily basis, the media, through its various outlets - television, radio, web sites, RSS, and podcasts - reports on issues that address our wellbeing. Through discussions, readings, and assignments, students enhance their ability to interpret and question information presented by the media by better understanding the inherent risks. Issues like alternative medicine (i.e. vaccinations) and socio-legal issues (i.e. bullying, hacking, surveillance, privacy) provide grounds for students to use principles from the social science as a means to think critically about real and perceived risks in daily life.

Prerequisite(s): PHI1000
Corerequisite(s):none

PHI4100 Survival in the Information Age: Risk and the Media

On an almost daily basis, the media, through its various outlets - television, radio, web sites, RSS, and podcasts - reports on issues that address our wellbeing. Through discussions, readings, and assignments, students enhance their ability to interpret and question information presented by the media by better understanding the inherent risks. Issues like alternative medicine (i.e. vaccinations) and socio-legal issues (i.e. bullying, hacking, surveillance, privacy) provide grounds for students to use principles from the social science as a means to think critically about real and perceived risks in daily life.

Prerequisite(s): PHI1000
Corerequisite(s):none

PHY4000 Black Holes, Big Bangs and the Cosmos

The dynamic and exciting field of Cosmology outlines our current understanding of the Universe from its start, at the so-called Big Bang, through the ensuing 13 plus billion years to the present and beyond. Students learn how to discuss our present understanding of the three phases of the Universe as well as its five part make up, with matter making up only 4% of the whole. Students explain our knowledge of the various phases of evolution of the Cosmos and also the latest theories and experiments that are trying to address our uncertainties. Throughout the course, students evaluate and debate many of today's ideas and concepts revolving around cosmology.

Prerequisite(s): none
Corerequisite(s):none

PHY4000 Black Holes, Big Bangs and the Cosmos

The dynamic and exciting field of Cosmology outlines our current understanding of the Universe from its start, at the so-called Big Bang, through the ensuing 13 plus billion years to the present and beyond. Students learn how to discuss our present understanding of the three phases of the Universe as well as its five part make up, with matter making up only 4% of the whole. Students explain our knowledge of the various phases of evolution of the Cosmos and also the latest theories and experiments that are trying to address our uncertainties. Throughout the course, students evaluate and debate many of today's ideas and concepts revolving around cosmology.

Prerequisite(s): none
Corerequisite(s):none

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PSI2000 Navigating Canada's Political Landscape

A developed knowledge of government and politics is key to an effective participation in public life. Drawing on current events, students explore the societal, cultural and constitutional context along with the major political parties and institutions that shape the Canadian political landscape. Students develop skills and techniques that allow them to position politicians, parties, and policies, past and present, on the spectrum of political ideology and Canadian political traditions. Working together and individually, students analyze issues from the perspective of various political approaches.

Prerequisite(s): none
Corerequisite(s):none

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A developed knowledge of government and politics is key to an effective participation in public life. Drawing on current events, students explore the societal, cultural and constitutional context along with the major political parties and institutions that shape the Canadian political landscape. Students develop skills and techniques that allow them to position politicians, parties, and policies, past and present, on the spectrum of political ideology and Canadian political traditions. Working together and individually, students analyze issues from the perspective of various political approaches.

Prerequisite(s): none
Corerequisite(s):none

PSY2100 Introductory Psychology

With its applications to behaviour and personality, psychology extends its reach into many aspects of our personal lives. The broad applications of this social science in both an applied and theoretical context are premised on a number of fundamental principles. Students explore historical breakthroughs that define the current boundaries of the discipline and interact with a number of the foundational concepts that resonate throughout daily life and popular culture. Students develop an introductory knowledge in the various schools of thought within the discipline.

Prerequisite(s): none
Corerequisite(s):none

PSY2100 Introductory Psychology

With its applications to behaviour and personality, psychology extends its reach into many aspects of our personal lives. The broad applications of this social science in both an applied and theoretical context are premised on a number of fundamental principles. Students explore historical breakthroughs that define the current boundaries of the discipline and interact with a number of the foundational concepts that resonate throughout daily life and popular culture. Students develop an introductory knowledge in the various schools of thought within the discipline.

Prerequisite(s): none
Corerequisite(s):none

QUA2000 Statistics

Students explore fundamental statistical concepts and use statistical software to summarize, analyze and present both descriptive and inferential statistics. Topics include central tendency, variation, probability, central limit theorem, sampling, estimation, hypothesis testing and simple regression and correlation. These theoretical concepts are explained through practical examples from various sectors. Students develop the required background for further study related to research.

Prerequisite(s): none
Corerequisite(s):none

SCI2000 Environmental Science

Environmental science is an interdisciplinary study of how the earth works, human interaction with the earth and how to address the existing environmental problems. Students explore natural capital and the degradation. Students engage in case studies, critical thinking and analysis of alternatives in exploring solutions and trade-offs in trying to address degradation.

Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s):none

SOC2000 Introduction to Sociology

When working with individuals and groups it is important to understand both the background and influences present. Students develop a familiarity with sociological theories and methodological approaches used to study individual and group behaviours. Students also examine variables that include culture, social class, race, and gender and how these variables may impact work with diverse individuals and groups.

Prerequisite(s): ENL1100
Corerequisite(s):none

SOC2001 Anti-Racism: Theory and Practice

Anti-racism is the practice of identifying, challenging, and changing the values, structures, and behaviours that perpetuate systemic racism. Students explore concepts of anti-oppressive practice, anti-racist pedagogy, diversity, and inclusion at the personal, societal, and institutional levels. Students develop an understanding of historical and present-day groups and figures that challenge oppressive structures in Canadian society. Through various learning activities and discussion boards, students will develop the necessary knowledge, attitude, and skills to become an authentic ally within society.

Prerequisite(s): none
Corerequisite(s):none

SOC2001 Anti-Racism: Theory and Practice

Anti-racism is the practice of identifying, challenging, and changing the values, structures, and behaviours that perpetuate systemic racism. Students explore concepts of anti-oppressive practice, anti-racist pedagogy, diversity, and inclusion at the personal, societal, and institutional levels. Students develop an understanding of historical and present-day groups and figures that challenge oppressive structures in Canadian society. Through various learning activities and discussion boards, students will develop the necessary knowledge, attitude, and skills to become

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an authentic ally within society.

Prerequisite(s): none
Corerequisite(s):none

SOC4000 Criminology

The interdisciplinary study of social science examining the individual and social aspects of crime is known as criminology. Students work through an introduction to the social science perspective on crime. Presentations, discussions, and assignments allow students to investigate the various theoretical positions related to crime and criminal behaviour. Working forward from the types and definitions of crime, students trace some of the links between government policy and the impacts of these policies on both society and the individual.

Prerequisite(s): SOC2000
Corerequisite(s):none

SOC4001 Global Perspectives

Sociology, through its exploration of the organization of society and the connections between people and their surroundings, provides new ways of looking at the world. Using fundamental knowledge in the field of sociology, students analyze globalization and its impact on Canadian society. Students take opposing views to debate the opportunities and challenges that come with globalization.

Prerequisite(s): SOC2000
Corerequisite(s):none

WKT0028 Co-Op Work Term 1

The first co-op placement provides students with experiential opportunities within the field. Students attain entry-level positions that involve a variety of activities allowing application of principles and concepts developed during previous study. Students returning from Co-op 1 bring additional practical considerations to subsequent study. Although centred with public and private organizations located in Eastern Ontario, co-op employment opportunities may be sought throughout Canada and abroad.

Prerequisite(s): none
Corerequisite(s):none

WKT0029 Co-Op Work Term 2

Co-op provides an experiential opportunity which is directly related to the field of study. The second work term centers on an expanded role with a higher level of responsibilities in the workplace. Students returning from co-op work term two contribute expanded knowledge and abilities to their program of study. Although centred with public and private organization located in Eastern Ontario, co-op employment opportunities are sought throughout Canada and abroad.

Prerequisite(s): WKT0028
Corerequisite(s):none

WKT0030 Co-Op Work Term 3

Co-op provides an experiential opportunity which is directly related to the field of study. The third work term centers on an expanded role with a higher level of responsibilities in the workplace. Students returning from co-op work term three contribute expanded knowledge and abilities to their program of study. Although centred with public and private institutions located in Eastern Ontario, co-op employment opportunities are sought throughout Canada and abroad.

Prerequisite(s): WKT0029
Corerequisite(s):none