Area of Interest: Advanced Technology

Bachelor of Technology (Digital Health) (Honours) (Co-op) Pathway for Computer Programming or Computer Engeering Technology - Computing Science

Honours Degree

Program Code: 6525A03FWO

4 Years

Ottawa Campus

Our Program

Information Communications Technologies (ICTs) are a critical aspect of modern digital health ecosystems, supporting healthcare delivery through the provision of timely and reliable information for patient care, scientific research, strategic decision-making, data analytics and consumer health applications. The four-year Bachelor of Technology (Digital Health) (Honours) program prepares students for a career in today`s digital health workforce by providing knowledge, skills and competencies in the related domains of health technology studies, business technology management, and software development.

Graduates of Computer Programming Ontario College Diploma or Computer Engineering Technology - Computing Science Ontario College Advanced Diploma receive credit for 15 courses, entering the program in Level 03, and reducing the time to completion to 3 years.

Students build a multidisciplinary set of competencies through immersive learning simulations, innovative laboratory exercises and applied digital health projects in order to leverage essential technologies and systems to become successful healthcare technology professionals. Students inform and shape the future of healthcare by contributing to the design, development and improvement of innovative healthcare technologies, such as mobile health apps, hospital information systems, clinical decision aids and business intelligence applications.

Students gain theoretical and practical knowledge through online, in-class, clinical and simulation-based learning experiences. Students apply analytical and leadership skills in a hands-on, research-rich learning environment throughout the program.

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 practical knowledge and abilities that can be leveraged in the health, technology and business sectors. Graduates are well positioned to find employment in healthcare institutions (e.g., hospitals, clinics, public health units, laboratories), digital health consulting firms, government (both federal and provincial), or other private sector digital health solution providers. Graduates also have the option to pursue further academic studies in the field.

The Bachelor of Technology (Digital Health) (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.
- Enjoy working both independently and collaboratively in problem-solving teams.
- Are interested in working in diverse situations spanning healthcare, business and technology.

- Enjoy confronting challenges and leveraging technologies to overcome obstacles.

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

Employment

Graduates inform and shape the future of healthcare by contributing to the design, development and improvement of innovative healthcare technologies, such as mobile health apps, hospital information systems, clinical decision aids, business intelligence applications and healthcare robotics software. They may find employment in healthcare institutions (e.g., hospitals, clinics, public health units, laboratories), digital health consulting firms, government (federal, provincial and municipal), or other private sector digital health solution providers. Because graduates also possess a BTM credential, their employment opportunities extend well beyond the healthcare sector to include the business and technology sectors.

Prospective job titles include: healthcare app developer; clinical workflow analyst; healthcare quality coordinator; business intelligence analyst; project/program manager; systems integration specialist; change management lead; health information system analyst; systems architect.

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.

- Apply accepted methodologies, theories, concepts and practices to develop and improve business and healthcare systems.

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

- Apply the Project Management Institute`s Body of Knowledge to business systems 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 development.

- 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 and healthcare processes, and healthy-living initiatives.

- Apply effective business technology management skills to innovate in digital health targeting new and existing local and global markets.

- Adhere to professional, ethical and legal codes and standards related to digital health.

- Conduct and evaluate research to contribute to evidence-based practice in digital health contexts.

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

- Analyze and evaluate how digital health solutions influence healthcare business practices, quality of care and patient safety.

- Assess how differing value judgments associated with the practice of healthcare, business management and information technology impact digital health decision-making.

Program of Study

Level: 03	Courses	Hours
ESC4300	Operations and Supply Chain Management	42.0
HLT0319	Introduction to Health Information Technology	42.0
MGT4102	Business Fundamentals	42.0
PHI2000	Introduction to Research	42.0
Level: 04	**Courses**	**Hours**
ACC4101	Financial Accounting	42.0
BUS0008	Business Analytics and Advanced Business Intelligence	56.0
ECO4201	Macroeconomics	42.0
HLT0280	Introduction to the Canadian Healthcare System	42.0
HLT0281	Healthcare Concepts	42.0
HLT0282	Health Records and Data Standards	56.0
Level: 05	**Courses**	**Hours**
BUS0007	Strategic Business Intelligence	56.0
CST3110	Enterprise Architecture	42.0
CST3111	Project Management for IT	42.0
GEP1001	Cooperative Education and Job Readiness	21.0
QUA2000	Statistics	42.0
Level: 06	**Courses**	**Hours**
HLT0283	Human Factors and Workflow Analysis	56.0
HLT0284	Change Management	42.0
HLT0285	Health Ethics, Privacy, and the Law	42.0
MGT0107	Business Technology Management	42.0
Co-op: 01	**Courses**	**Hours**
WKT0028	Co-Op Work Term 1	
Level: 07	**Courses**	**Hours**
BUS0010	Business Systems Security, Audit and Control	42.0
CST3115	Enterprise Mobile Application Development	56.0
HLT0286	Decision Support in Healthcare	56.0
HLT0287	Project I	42.0
MGT4701	Advanced Business Statistics	42.0

Elective: choose 1	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**
HLT0288	Healthcare Quality Improvement	42.0
HLT0289	Project II	42.0
MGT6120	Entrepreneurship	42.0
Elective: choose 1	**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.

Additional program related expenses include:
Books and supplies cost approximately $1,000 per academic year.

Admission Requirements for the 2025/2026 Academic Year

Program Eligibility

- Graduates of Computer Programming Ontario College Diploma or Computer Engineering Technology - Computing Science Ontario College Advanced Diploma with Grade Point Averages of 2.7 are eligible to enter into Year 2, Level 03 of the degree program.

Admission Requirements for 2024/2025 Academic Year

Program Eligibility

- Graduates of Computer Programming Ontario College Diploma or Computer Engineering Technology - Computing Science Ontario College Advanced Diploma with Grade Point Averages of 2.7 are eligible to enter into Year 2, Level 03 of the degree program.

Application Information

BACHELOR OF TECHNOLOGY (DIGITAL HEALTH) (HONOURS) (CO-OP)
Pathway for Computer Programming or Computer Engineering Technology - Computing Science
Program Code 6525A03FWO

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 Fall 2020. 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.

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 http://file:///C:/Users/scrivem/AppData/Local/Apps/2.0/QD5BGPC9.JKL/DDBMOWMV.E21/test..tio-n_e800ab5aa35904b3_0001.0000_507df9eaea9659ec/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. 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 ,

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

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

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

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

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

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 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

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

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

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

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

HLT0280 Introduction to the Canadian Healthcare System

The Canadian healthcare system is a complex mix of jurisdictions, payment methods, delivery systems, care providers, and views of wellness and illness that those who work in healthcare and with health professionals should understand. Students explore federal, provincial/territorial and local government responsibilities for healthcare and public financing. Focus is on how healthcare agencies provide healthcare to individuals, families, groups and communities though prevention, care for the acutely and chronically ill and palliative care. Other topics include the roles of healthcare providers, scopes of practice, how roles overlap and complement each other and issues in providing comprehensive interprofessional, patient-centred care.

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

HLT0281 Healthcare Concepts

The Canadian healthcare system is an intricate web of complex processes, professions and institutions, each of which has a language unique to it. Understanding how digital technologies interface with and creatively transform healthcare relies on foundational knowledge of medical and healthcare processes and terminology. Throughout this interactive course students learn the functions, and practice the language of clinical and administrative healthcare environments such as: patient care, patient scheduling, admission, discharge and transfer (ADT), pharmacy and medication management and diagnostic and surgical procedures. Through the use of appropriate terminology, medical abbreviations and acronyms students develop language that supports effective communication with healthcare professionals and stakeholders.

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

HLT0282 Health Records and Data Standards

Health records are a critical component of every health system. Records enable health professionals to understand a patient's health history and give both professionals and consumers more complete and accurate information to inform decision-making. With the broad adoption of electronic medical record systems the ability to store, maintain and transfer data in a standardized fashion is key to improving healthcare processes, communicating across local and global organizations and maintaining patient safety. Students evaluate different concepts for maintaining quality health records, including the health information lifecycle. Through hands-on, lab-based exercises, students examine standards for abstracting, coding and transferring electronic health data such as ICD 9/10, SNOWMED, LOINC and HL7.

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

HLT0283 Human Factors and Workflow Analysis

Humans have capabilities and limitations that affect their performance. The design of technology and systems can positively or negatively affect job performance and patient safety in healthcare. Students examine theories of design and analysis related to human factors and human-computer interaction, including workflow analysis. These methods are put into practice with a combination of classroom activities and time in the simulation lab where realistic clinical scenarios are created. The simulation lab experience provides students with the opportunity to learn and practice data collection methods used in human factors evaluations, and to identify threats to patient safety when new technologies are introduced.

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

HLT0284 Change Management

Healthcare organizations are subject to continuous change, whether it's through the introduction of new or redesigned technologies and processes into clinical practice or continuous quality improvement strategies. Managing that change effectively requires knowledge of change management theories and applications. Students explore the theories and applications of change and examine the psychology of organizational behaviour and change. Students analyze examples of successful change and common modes of failure. Students plan for change by applying knowledge in areas such as: leadership and negotiation skills, conflict management, knowledge translation, and physician and stakeholder engagement.

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

HLT0285 Health Ethics, Privacy, and the Law

There are a number of ethical and legal issues unique to the practice of healthcare. For example, for healthcare to be delivered effectively individuals must often divulge sensitive personal information, which must be collected and used according to ethical and professional standards, and privacy legislation specific to healthcare. Students engage various ethical and privacy issues in

healthcare and the digital health ecosystem. Topics include: value theory, privacy; research ethics; anonymity and re-identification; autonomy and informed consent. Students explore the relationship between ethics, privacy and the law, and the design and use of digital health technologies.

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

HLT0286 Decision Support in Healthcare

Decision support in healthcare has evolved from simple data extraction for measuring quality and cost to providing meaningful support for healthcare professionals working in complex environments. Students examine the history of decision support in healthcare with emphasis on potential and currently available clinical decision support. Classroom activities complement and provide background for simulation labs. Students examine how clinical decision support changes clinical workflow and also examine the advantages, as well as unintended consequences, of clinical decision support in healthcare.

Prerequisite(s): HLT0283
Corerequisite(s):none

HLT0287 Project I

In order to practice in a professional capacity, students must fully integrate their digital health skills and knowledge. Students integrate the knowledge accumulated in the previous three years of study in the program into a practical design and build of a year-long project of which the first half is in this course. Students collaborate in groups to apply their business, healthcare and IT skills to a real-world project. By applying standard project management principles, students identify and define a problem and produce a digital health solution. Students may have the opportunity to partner with industry on applied research projects.

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

HLT0288 Healthcare Quality Improvement

Quality and patient safety represent priority areas and drivers for improving our health care system, leading to better patient care processes and outcomes. Students examine the principles and concepts related to quality and quality improvement in healthcare. Topics include approaches for assessing and evaluating quality of care, contemporary patient safety issues, quality improvement strategies and philosophies, as well as an overview of tools and methods used for quality management and improvement.

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

HLT0289 Project II

Possessing practical and real-world experience in project development is a necessity for entry into the field of digital health. Students apply skills and knowledge acquired throughout the program such as conceptual frameworks, methodologies and principles in executing digital health projects. Emphasis is on capably performing tasks during the completion of project work. Students finalize the design work, integrate components and develop implementation and maintenance plans to ensure that the project meets the requirements set in the initial project plan.

Prerequisite(s): HLT0287
Corerequisite(s):none

HLT0319 Introduction to Health Information Technology

Possessing strong underpinning knowledge of principles and methodologies related to health information technology (HIT) provides the groundwork further development within the field. Students examine the fundamentals of HIT concepts along with the challenges, risks and values. Topics include: electronic health records, telehealth/telemedicine, end-user involvement, privacy

and security issues and regulations, back-ups and recovery planning, networking technologies and IT certifications. Students also explore current IT trends in the healthcare field including mobile health, smart homes, wearable computing, and artificial intelligence.

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
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

PHI2000 Introduction to Research

Academic research requires students to possess a fundamental knowledge of accepted methodologies and practices. An overview of the research process and tools prepares students to engage in scholarly work. Emphasis is on evaluation, selection and documentation of primary and secondary sources, as well as the development of a research project.

Prerequisite(s): ENL1100 and 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

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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

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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

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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

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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

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students evaluate and debate many of today's ideas and concepts revolving around cosmology.

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

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

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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

SOC4001 Global Perspectives

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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