

Area of Interest: Advanced Technology

## Digital Health

Ontario College Graduate Certificate

Program Code: 1622X01FWO

42 Weeks

Ottawa Campus

### Our Program

#### Are you ready to transform health care?

The Digital Health Ontario College Graduate Certificate program helps you understand the ever-changing realities of the healthcare system, shifting towards a digital health ecosystem. This program provides you with the skills to lead and implement projects and contribute to their effectiveness and ultimately, to patient safety.

Through online, in-class and simulation activities, you gain both theoretical and practical knowledge. Your experience is also enhanced through exposure to broad information technology contexts in health care. These may include First Nations and Inuit, rural and remote settings, hospitals and other large healthcare organizations, as well as community-based health care and consumer health. This program provides you with opportunities to access research and development experiences in collaboration with digital health community partners by applying your skills in a hands-on, technology and research-rich learning environment.

By graduation, you understand how to assess, manage and put projects in place in today's dynamic healthcare system. You may find work leading and managing digital health projects and programs in:

- healthcare institutions
- consulting firms
- government, and
- other private sector health providers

#### SUCCESS FACTORS

This program is well-suited for students who:

- Enjoy learning about, and working with current technology in the rapidly changing environment of digital health.
- Are comfortable communicating with and leading groups of peers in professional settings.
- Seek opportunities to work with groups of individuals with diverse professional backgrounds.
- Are comfortable making and executing decisions.
- Enjoy presenting and communicating ideas to diverse audiences.
- Value lifelong learning.

#### Employment

Graduates may find employment contributing to digital health projects and programs as project/program managers, outcomes specialists, process improvement specialists/directors, change managers, digital health strategists, clinical informatics managers, solutions architects or information technology directors.

## Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Assess organizational requirements for digital health systems.
- Formulate strategies for selecting and implementing digital health systems.
- Evaluate and anticipate the impact of digital health systems on business/clinical processes, health services delivery and quality across the continuum of care.
- Assess how differing value judgments in healthcare, management, and information sciences influence interprofessional decision-making.
- Apply principles of interprofessional teamwork to communicate and collaborate effectively with clients, colleagues and members of the interprofessional team.
- Analyze, design, develop and implement digital health systems using knowledge of clinical, biomedical and bioethical concepts, clinical care processes, technologies and workflow.
- Identify, select and apply best practices for managing change during the implementation of digital health systems.
- Assess the impact of ethical, legal, financial, and regulatory components of the Canadian healthcare system on digital health decision-making.
- Design and facilitate training in, and/or orientation to, the effective use of health information system technology and health information standards in health-related settings.
- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

## Program of Study

Level: 01	Courses	Hours
COM0009	Communication for Digital Health	21.0
CST0003	Digital Health Information Technology I	42.0
HLT0232	The Canadian Healthcare System	42.0
HLT0361	Values and the Interprofessional Team	21.0
MGT0097	Leadership and Management of Change in Digital Health	42.0
MGT0098	Project Management in Digital Health	24.0
Level: 02	Courses	Hours
CST0004	Health Data Standards	42.0
CST0005	Digital Health Information Technology II	24.0
HLT0233	Workflow, Human Factors and Patient Safety	42.0
HLT0234	Health Ethics and Privacy	42.0
HLT0235	Digital Health Project I	42.0
Level: 03	Courses	Hours
EDU0009	Education for Digital Health Implementation	18.0

HLT0236	Health Informatics - Project II	42.0
HLT0237P	Digital Health Practicum	70.0
HLT0237S	Digital Health Seminar	12.0
MGT0099	Digital Health Systems Design and Analysis	42.0

## Fees for the 2023/2024 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 \$1,500.

## Admission Requirements for the 2024/2025 Academic Year

### Program Eligibility

- Ontario College Diploma, Ontario College Advanced Diploma, Degree or equivalent in a Health, Management or Technology related field.
- Applicants with international transcripts must provide proof of the subject-specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).
- IELTS-International English Language Testing Service (Academic) Overall band of 6.5 with a minimum of 6.0 in each band; OR TOEFL-Internet-based (iBT)-overall 88, with a minimum of 22 in each component: Reading 22; Listening 22; Speaking 22; Writing 22; OR Duolingo English Test (DET) Overall 120, minimum of 120 in Literacy and no score below 105.

### Police Records Check Documentation:

Though not an admission requirement, applicants must note important information listed below regarding Police Records Check program requirements.

Students must provide the College with a current Police Records Check (PRC) prior to the deadline identified by the department and students are responsible for any associated costs. If this documentation is not submitted on time, students may not be placed and registration in the program will be jeopardized. If you register in the program without a clear PRC and as a result are unable to participate in placement, you will not be able to graduate and will be asked to withdraw.

### Field Placement Eligibility:

Field placements occur in the third term of the program.

Hospital field placements require Health and Safety, WHMIS and OWSHA training prior to starting placement. There are additional costs associated with training that should be anticipated by students which are not covered by tuition fees.

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**Application Information****DIGITAL HEALTH  
Program Code 1622X01FWO**

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

Applications are available online <http://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 applying from out-of-country can obtain the International Student Application Form at <https://algonquincollege.force.com/myACint/> or by contacting the Registrar's Office.

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**

The physical and emotional health of each applicant to the program must be such that they can successfully cope with the program of instruction including the demands of field placement (e.g. stress and time management).

Individuals who have concerns about their ability to meet these requirements should contact the program coordinator prior to submitting an application.

## Contact Information

### Program Coordinator(s)

- Eric Liu, <mailto:digitalhealthcoord@algonquincollege.com> ,

## Course Descriptions

### COM0009 Communication for Digital Health

Effective communication is essential for professionals working in digital health. Students use various communication strategies and tools for effective interprofessional communication within the digital health ecosystem. Using a combination of theory and practice-based activities, students gain experience in interdisciplinary knowledge translation, oral communication techniques, active listening techniques and business communication. Students apply communication skills by producing documents and presentations common to digital health professionals.

Prerequisite(s): none

Corerequisite(s):none

### CST0003 Digital Health Information Technology I

Leaders in digital health require comprehensive knowledge of the fundamental concepts and components that make up the digital health ecosystem. Students gain a basic understanding of digital health concepts, such as: structured data; back-ups; privacy; information standards; security; and auditing. Students also characterize and differentiate between digital health components including: networking technologies; software applications; expert systems; decision support systems; databases; mobile health applications; and basic architectures used in the design of digital health solutions. Students focus on the role that each of those concepts and components occupies within the digital health ecosystem in support of the delivery of healthcare.

Prerequisite(s): none

Corerequisite(s):none

### CST0004 Health Data Standards

Maintaining health data standards is critical in the digital health ecosystem in order to support the meaningful collection, storage and use of data. The significance of data standards and their relationship to the effective use of health data within the healthcare system are explored. Learning activities guide students through an examination of the principles of data quality and introduce them to the value of data classifications, vocabularies and nomenclatures. Through lab-based coding activities, students gain practical experience applying the various data standards commonly used in healthcare.

Prerequisite(s): none

Corerequisite(s):none

### CST0005 Digital Health Information Technology II

Leaders and managers in digital health, who wish to be on the cutting-edge of the rapidly evolving technology curve, benefit from the exploration and evaluation of new and emerging digital health technologies. Learning resources are used to introduce students to a variety of new and emerging digital health technologies. Students research and discuss trends and issues related to those technologies, and the impact of digital health on patients and healthcare consumers. Case-based activities challenge students to anticipate the impact of new and emerging technologies on the support and delivery of healthcare.

Prerequisite(s): CST0003

Corerequisite(s):none

**EDU0009 Education for Digital Health Implementation**

Successfully implementing digital health solutions in an organization requires designing and delivering educational programs for management, employees and support staff. Students gain experience identifying educational goals, planning lessons, creating learning objectives, assessing performance and delivering an education module. Drawing from theories and methods of education introduced through learning activities, students focus on a specific digital health solution to produce and deliver an education module to peers.

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

**HLT0232 The Canadian Healthcare System**

The Canadian healthcare system is complex and multi-faceted, raising unique information technology requirements. Emphasis is on examining how healthcare differs from other sectors and how the various components of the Canadian healthcare system influence digital health decision-making. Specific topics include: the history of eHealth in Canada; legal and regulatory structures; regulated health professions; ethics; privacy; policy; health economics; differences between federal, provincial, and municipal healthcare delivery; and funding sources. Students engage in learning activities covering the various social and institutional aspects of the Canadian Healthcare System.

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

**HLT0233 Workflow, Human Factors and Patient Safety**

Clinical processes and workflows are an important aspect of maintaining best practices and improving quality and patient safety. The introduction of digital health systems into a healthcare setting often requires modifying accepted processes and workflows. How do the interactions between the clinical environment, humans and technology affect considerations related to adopting digital health solutions? Students explore this question through a series of cases, with an emphasis on the relationship between workflow, usability and patient safety. Lab-based simulations provide students with experience in evaluating the safety and effectiveness of clinical processes and technology using human factors and quality improvement methods, with a focus on the impact of the design of systems and digital health solutions.

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

**HLT0234 Health Ethics and Privacy**

For healthcare to be delivered effectively individuals must often divulge sensitive personal information and agree to invasive procedures. The healthcare industry and healthcare professionals are therefore held to high ethical and privacy standards that impact decision making. Students engage various ethical and privacy issues specific to the digital health ecosystem. Topics include: privacy law; privacy impact assessments; social networking; mobile health technologies; anonymity and re-identification; informed consent; consumer health technologies; cloud computing; artificial intelligence; and surveillance. Through online case based activities and in-class discussions, students explore the relationship between ethics, privacy and the design and use of digital health technologies.

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

**HLT0235 Digital Health Project I**

Projects bring students together to apply practical skills and theory in an interprofessional team based setting. Students draw from theory and skills to solve practical problems in digital health. Working in groups, students plan, analyze and execute a project in digital health. Upon producing project reports, students present projects to community stakeholders who provide a detailed critique of, and feedback on, the overall project deliverables.

Prerequisite(s): COM0009 and CST0003 and HLT0232 and HLT0361 and MGT0097 and MGT0098  
Corerequisite(s):none

### **HLT0236 Health Informatics - Project II**

Projects bring students together to apply practical skills and theory in an interprofessional team based project setting. Students draw from theory and skills gained throughout the complete program of study to solve practical problems in digital health. Working in groups, students plan, analyze and execute a project in digital health. Upon producing and submitting project reports, students present their projects to community stakeholders who provide a detailed critique of, and feedback on, the overall project deliverables.

Prerequisite(s): CST0004 and CST0005 and HLT0233 and HLT0234 and HLT0235  
Corerequisite(s):none

### **HLT0237P Digital Health Practicum**

The practicum is an opportunity for students to practise the breadth and depth of knowledge and skills gained throughout the program in a clinical setting. Students identify and solve a specific problem particular to a clinical setting. Students select placements from the following healthcare contexts: First Nations and Inuit, rural, and remote settings; hospitals and other large healthcare organizations; and community-based healthcare and consumer health. Assessment in the practicum is based on supervisor feedback and student submitted reports.

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

### **HLT0237S Digital Health Seminar**

The seminar is an opportunity for students to discuss and provide feedback to their colleagues on the projects they are working on in placement settings. Students present their projects on a bi-weekly basis, and the professor and students discuss them as a group. This seminar setting allows students to continue to collaborate with fellow students throughout their placements, and allows for inter-professional sharing with the group.

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

### **HLT0361 Values and the Interprofessional Team**

As key members of the healthcare team, digital health professionals must function as competent interprofessional collaborators. Students are exposed to theory through learning modules and participate in lab-based simulation activities to develop competencies in: interprofessional communication; patient/client/family/community-centred care; role clarification; team functioning; collaborative leadership; and interprofessional conflict resolution. Regular classroom discussions introduce students to case examples that explore a range of interprofessional competencies.

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

### **MGT0097 Leadership and Management of Change in Digital Health**

Successfully integrating digital health solutions into a healthcare setting requires knowledge and skills in health management. Students engage in both theoretical and applied activities to gain a practical understanding of organizational behaviour, IT procurement and health economics. Specific topics include: motivation and leadership; decision-making; power and control; conflict; management of change; requirements scoping; requests for proposal; contracts; service level agreements; population-based health economics; health consumerism; and designing performance indicators for digital health. Through projects, students develop change management plans to maximize success when implementing digital health systems in the workplace.

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

**MGT0098 Project Management in Digital Health**

A solid foundation in project management is essential for individuals interested in leading innovative projects within and across disciplines in digital health. The fundamentals of project management are covered including: the project lifecycle; preparing and managing a project budget; initiating and closing a project; time management; resource management; quality management; cost and risk management; and stakeholder engagement. Students explore theory, and apply it through the use of project management software to complete a series of assignments.

Prerequisite(s): none

Corerequisite(s):none

**MGT0099 Digital Health Systems Design and Analysis**

Sound reasoning should support all decisions regarding the introduction of digital health solutions into an organization. With focus on strategic planning, students examine the principles and methods of systems design and analysis through case-based activities. Students apply knowledge and skills to critically compare alternative digital health solutions, prepare cost/benefit analyses and reflect on case examples.

Prerequisite(s): CST0004 and CST0005 and HLT0233 and HLT0234 and HLT0235

Corerequisite(s):none