

eHealth/HRM 724

Fundamentals of eHealth and the Canadian Health Care System Fall 2022 Course Outline

MSc eHealth McMaster University

COURSE OBJECTIVE

This tutorial-based course will cover a broad range of eHealth topics from the perspective of health care delivery. Topics include a definition of eHealth; health care data; hospital and primary care information systems (i.e. electronic health records [EHR] systems); specialty components of an EHR system; how health professionals use data; human/cognitive factors in development and implementation of eHealth applications; patient safety; standards, vocabulary and nomenclatures and how used; aggregation of health information, especially for research purposes; patient information systems and consumer eHealth; and research and evaluation of eHealth applications and research using eHealth applications.

INSTRUCTOR AND CONTACT INFORMATION

Dr. Cynthia Lokker

Instructor

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Office: CRL 137

Virtual Office Hours in Teams:

Friday, 3:00-3:30 pm

Link in Avenue to Learn

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Course website: <https://avenue.cllmcmaster.ca/d2l/home/484676>

COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	No	Global view:	Yes
Avenue:	Some	Ethics:	Yes	Numeracy:	No	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	No	Final Exam:	No	Guest speaker(s):	Yes

COURSE DESCRIPTION

This tutorial-based course will cover a broad range of eHealth topics from the perspective of health care delivery. We start with an introduction to the Canadian healthcare system—how it is structured and funded. During the course we will examine elements of healthcare in some detail with the lens of communication technology: primary care, hospital care, and public health. We will learn about important functions of eHealth applications, such as electronic health records, computerized decision support, and privacy legislation. We will also cover some of the organizations with key roles in eHealth/digital health in Ontario and Canada.

Implementation of eHealth is usually due to system and organizational change. We will spend some time talking about the importance of rigorous scientific evaluation of eHealth projects and systems, covering research and the potential for big data projects to guide new knowledge and to ensure clinical efficacy. eHealth, like other elements of healthcare, should rely on a solid evidence-base. Other topics include use of standards and vocabularies and the future of eHealth.

The course gives an overview of eHealth from the health care perspective. It is also designed to provide opportunities to enhance skills important for their future work in eHealth.

The course is designed to enable learning to occur in several ways.

- Weekly curated content including readings, videos, and activities;
- Real-time lectures; and
- Weekly small discussion group sessions with classmates;
- There is a focus on teamwork and oral and written communication in a variety of formats.

LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

- Describe the Canadian health care system—how it is structured and funded;
- Identify information flow and needs across healthcare levels;
- Define eHealth and appreciate the breadth of the field;
- Identify the main applications of eHealth in health care, understand their role and potential impact;
- Identify challenges in the field, and critically appraise strengths and limitations of eHealth solutions;
- Recognize the effect of the culture of health care on planning, implementation, and use of information technologies;
- Identify areas in healthcare that could benefit from eHealth-supported solutions;
- Consider privacy, security, and confidentiality issues from the health care provider and patient perspective in relation to eHealth applications and research, and be aware of the role of policy and legislation in this area;
- Appreciate the complexity of healthcare and the role that eHealth can play in providing care for patients and the population.

REQUIRED COURSE MATERIALS AND READINGS

<p>Avenue to Learn for course content, readings, materials, and assignments</p> <ul style="list-style-type: none"> ➤ http://avenue.mcmaster.ca 	<p>\$ FREE</p>
<p>Hoyt RE, Yoshihashi A, Bailey N. Health informatics: Practical guide for healthcare and information technology professionals. Lulu Press. 2018 Seventh edition. http://www.lulu.com/shop/william-r-hersh-and-robert-e-hoyt/health-informatics-practical-guide-seventh-edition/paperback/product-23655642.html.</p> <ul style="list-style-type: none"> ➤ An electronic version of the book can be purchased or rented at RedShelf.com. https://redshelf.com/book/927425/health-informatics-927425-9781387642410-robert-e-hoyt-and-william-r-hersh 	<p>\$ 19.95 USD</p>
<p>Health Systems in Transition: Canada, Third Edition. Gregory P. Marchildon, Sara Allin, and Sherry Merkur. 2021. ISBN: 9781487508081. Also available through the bookstore, Amazon, Indigo.</p> <ul style="list-style-type: none"> ➤ Available free here: https://apps.who.int/iris/bitstream/handle/10665/336311/HiT-22-3-2020-eng.pdf 	<p>\$ 32.95 CAD</p>

EVALUATION

Written assignments are used to evaluate knowledge; critical appraisal skills; critical thinking, analysis, and synthesis skills. They test the understanding of principles or relationships, foster independent thinking and learning, and develop writing skills. Written assignments are assessed on content, organization, style, and mechanics.

A successful eHealth professional needs to work with many stakeholders, not all of whom have the same perspectives. Communication of complex ideas in simple, concise language is key, especially to stakeholders who may not understand the complexities of eHealth and implementation. Assignments for this course are designed to help you develop and hone these skills.

Work will be evaluated on an individual basis except in certain cases where group work is expected. In these cases, group members will share the same grade. Your final grade will be calculated as follows:

Components and Weights

Assignment	Grade allocation	Due date
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Article summary and appraisal	10%	Oct 14 (electronic submission by 11:59 pm on AVENUE on the due date).
Individual reflection paper	20%	Nov 18 (electronic submission by 11:59 pm on AVENUE on the due date)
Final project: (groups of 3-5 students)		
Proposal, 2-4 pages	5%	Oct 28 (electronic submission by 11:59 pm on AVENUE on the due date).
Final report	35%	Dec 12 (electronic submission by 11:59 pm on AVENUE on the due date)
Final project video (presented on Dec 6)	10%	Dec 5 (electronic submission by 8:00 pm)
Class participation	12%	Details will be shared (attendance/participation)
Tutorial facilitator	8%	Between Sep 27 to Nov 29, each student will facilitate 1 tutorial session (there will be a sign-up process and details on how to facilitate a session). A written summary will be submitted and graded.
Team report	bonus 0.5% for completion	Dec 12 (electronic submission by 11:59 pm on AVENUE on the due date)

Grade Conversion

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme:

LETTER GRADE	PERCENT	POINTS
A+	90-100	12
A	85-89	11
A-	80-84	10
B+	77-79	9
B	73-76	8
B-	70-72	7
F	00-69	0

Course Deliverables

Assignment #1 – Article summary and critical appraisal

Graded individually. The goal of this assignment is to find a suitable eHealth research article from the peer-reviewed literature and summarize and critically appraise it. The key skills are searching and reading the literature, writing succinctly, and appraising the quality of the science of eHealth. Rubric provided.

Assignment #2 – Reflection essay

Graded individually. This is an opportunity to consider how your thinking and understanding of eHealth has evolved throughout the course, tied to experience, course materials, lectures and discussions. You will be prompted to write a brief note of expectations and beliefs at the beginning of the course to help guide your reflection on your personal growth in knowledge and self-discovery. Rubric provided.

Assignment #3 – Tutorial facilitation summary

Graded individually. Each of you will have an opportunity to lead the discussion during tutorial. You will be expected to plan the session and write a summary of what your group discussed. Rubric provided.

Assignment #4 -Final project

This assignment totals 50% of your grade and is graded as a group. The initial deliverable is a short proposal (5%) which will include a group contract. There is a final paper (35%) and presentation (10%). The exercise will be to identify a challenge in healthcare that could be solved with an eHealth solution and to consider your solution from a range of perspectives. Rubrics provided.

Participation-

Participation averages to about 1% per unit and based on preparation before and participation during lecture and tutorial. You will provide your own participation goals and a self-assessment of how well you contributed to these aspects of the course. Self-assessed but the final grade is at the discretion of the instructor.

Team report

0.5% bonus allocated individually for completing assessments of how your team functioned.

ACTIVITY	DELIVERY	DESCRIPTION	TOOL(S)
1. Readings	Asynchronous	Tied to weekly lectures and tutorials and should be completed BEFORE lecture/tutorial	Readings outlined in unit summaries in Avenue
2. Lectures	Synchronous	In-person lectures, Tuesday from 1-2:30 pm.	
3. Tutorials	Synchronous	1.5 hr. in-person sessions; discuss readings and participate. Unit 3-12 will be facilitated by a student. Tues 2:30-4:00 pm (5 groups).	Health Science Centre rooms; each group has a MS Teams space for communication, file sharing
4. Group Work Discussions	Both	Synchronous: your preference Asynchronous: Teams private groups	Synchronous: Zoom, Teams, Google; library rooms Asynchronous: each group has a MS Teams space for communication, file sharing
5. Assignments	Asynchronous	Assignment folders for submission and feedback are in Avenue	Avenue

Avenue to Learn

Avenue will be the primary platform for the course. **Announcements** for major communication with the whole class; **calendar** (under resources) for details on lecture times and locations and deadlines; **content** for details on readings and activities for each unit; groups (under communication) for tutorial and final project groups); **quizzes** (under assessments) for participation goals and check-ins; and **assignments** (under assessments) for instructions, rubrics, and submission folders for all course deliverables.

Microsoft Teams

We will be using Microsoft Teams for

- Communicating with course project teams;
- Sharing files and communicating with your tutorial groups;
- Questions about course content, processes, assignments;

The 'posts' tab functions much like Facebook Messenger and is a great place to engage. There will be a general channel for any questions or out of class discussions, and a channel created for each tutorial group and each final project group to communication.

COMMUNICATION AND FEEDBACK

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Administrative Assistant.

Instructors are encouraged to conduct an informal course review with students by Week #4 to allow time for modifications in curriculum delivery. Instructors should provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term.

ACADEMIC DISHONESTY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at: www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

AUTHENTICITY/PLAGIARISM DETECTION

This course uses a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course.

The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ON-LINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

MISSED ACADEMIC WORK

Missed Examinations / Tests / Class Participation

Students can apply for relief of missed term work if they have or are going to miss an evaluated portion of their course. Please contact the Program Administrator for more information.

Students can request relief for:

- Health-related or extenuating circumstances
- Work-related commitments (for part-time students only)
- Representing the University at an academic or varsity event
- Religious obligations
- Conflicts between two (or more) overlapping scheduled mid-term exams

Requesting Relief for Missed Term Work

If a portion of your term work is missed for legitimate reasons, as determined by Program Administrator, the weight for that missed term work will be redistributed across the other assignments and exams of the course. For missed work, forms and supporting documentation must be submitted to Program Administrator within five (5) business days of missing the work or mid-term exam.

Requesting Relief for Term Work in Advance

If evaluated term work is missed, students can request for relief/special arrangement in advance. Supporting documentation must be submitted to the Program Administrator at least ten (10) working days before the mid-term exam, test, assignment, etc.

The program administrator will provide the required forms to the student. Please complete the Petition for Missed Term Work form in addition to:

- For medical reasons the McMaster University Student Health Certificate and for extenuating circumstances, appropriate documentation is required.
- Due to a business commitment (for part-time students only), have your immediate supervisor provide you with a letter on company letterhead stating that you are unable to be present due to a specific job commitment.
- For varsity reasons, have a designated University official provide a letter on university letterhead; or
- For religious reasons, have your religious leader provide a letter stating that you are unable to be present due to a religious obligation.

In all cases, the request must be handled by The Program Administrator. The appropriate distribution of re-weighting term work will be determined by the instructor. Submitting a request does not guarantee approval or special consideration.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is: <http://sas.mcmaster.ca>

RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

POTENTIAL MODIFICATION TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

RESEARCH USING HUMAN SUBJECTS

ONLY IF APPLICABLE

Research involving human participants is premised on a fundamental moral commitment to advancing human welfare, knowledge, and understanding. As a research intensive institution, McMaster University shares this commitment in its promotion of responsible research. The fundamental imperative of research involving human participation is respect for human dignity and well-being. To this end, the University endorses the ethical principles cited in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans: <http://www.pre.ethics.gc.ca>

McMaster University has mandated its Research Ethics Boards to ensure that all research investigations involving human participants are in compliance with the Tri-Council Policy Statement. The University is committed, through its Research Ethics Boards, to assisting the research community in identifying and addressing ethical issues inherent in research, recognizing that all members of the University share a commitment to maintaining the highest possible standards in research involving humans.

If you are conducting original research, it is vital that you behave in an ethical manner. For example, everyone you speak to must be made aware of your reasons for eliciting their responses and consent to providing information. Furthermore, you must ensure everyone understands that participation is entirely voluntary. Please refer to the following website for more information about McMaster University's research ethics guidelines: <http://reo.mcmaster.ca/>

Organizations that you are working with are likely to prefer that some information be treated as confidential. Ensure that you clarify the status of all information that you receive from your client. You **MUST** respect this request and cannot present this information in class or communicate it in any form, nor can you discuss it outside your group. Furthermore, you must continue to respect this confidentiality even after the course is over.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your registration and continuous participation (e.g., on TEAMS, A2L, in the classroom, etc.) to the various learning activities of eHealth/HRM 724 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

TENTATIVE COURSE SCHEDULE

Unit	Date	Topic
1	Sept 13	Introduction to the Canadian healthcare system
2	Sept 20	Electronic Health Records (EHR) systems
3	Sept 27	Defining eHealth and the flow of health information; the Canadian eHealth landscape
4	Oct 4	Evidence-based medicine and why it matters to eHealth
5	Oct 11	TBD
6	Oct 18	TBD
7	Oct 25	Vocabularies, terminologies, and standards
8	Nov 1	TBD
9	Nov 8	TBD
10	Nov 15	TBD
11	Nov 22	TBD
12	Nov 29	Future of eHealth
13	Dec 6	Final project viewing in-person
	Topics awaiting scheduling	<ul style="list-style-type: none"> • Public health informatics • Ethics, privacy, and confidential • Consumer digital health and design • Implementation, adoption, use, system maturation
	Potential topics for TBD weeks	<ul style="list-style-type: none"> • Home care and long-term care • Pharmacy eHealth and medication management (hospital-based care) • Data analytics • Virtual care