Non-Major Modification Program Changes

1. Program: Health Policy, Management & Digital Health

2. Degree Designation: Certificate in Digital Health (formerly Certificate in Health Informatics)

3. Type of Modification: components to certificate

4. Effective Date: September 2023

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5. State what the changes are (Example: increase / decrease to the number of major credits)

   Add HLST 3350 3.00: Health Data Analytics, Machine Learning and AI as **core required; remove** HLST 4320 3.00 eHealth **from list of core requirements; and add** HLST 4320 3.00 eHealth **to the list of electives.**

   Add the following courses as new electives:
   HH/HLST 3500 3.00 Quality and Operational Excellence in Healthcare - Introduction to Lean Six Sigma
   HH/HLST 4350 3.00 User Experience Design for Healthcare

   Remove AP/ITEC 1000 3.00 **from the list of core requirements**; and **add** AP/ITEC 1010 3.00 as a **core requirement.**

   Removal of NURS courses **from core and elective requirement** lists that are not anymore offered or available for our students (HH/NURS 3240 3.00; HH/NURS 3230 3.00 and HH/NURS 3220 3.00).

6. Provide the rationale for the proposed changes that is rooted in the program learning outcomes.

   HH/HLST 4320 3.00: the course provides an analysis of eHealth systems advantages, which is a detailed in-depth look of systems encountered in HLST 2040. This in-depth analysis is not necessary to have but good to have. While HLST 3350 is now a necessity to have in the list of informaticians skills a health. Those who would like to take a closer look into eHealth systems can choose to do so as an elective.

   HH/HLST 3350 3.00: Machine learning became an essential skill in the market. It is becoming a necessity to have such skills for informaticians as substantiated by latest reports (report1, report 2).

   HH/HLST3500 3.00: Students who are interested in quality management might benefit from knowledge about the quality improvement processes and project management skills embedded in this course. Lean Six Sigma is a cross-industry skill.

   HH/HLST 4350 3.00: This course provides students with concrete design and project management experience that are necessary for working in the digital health sector.

   AP/ITEC 1000 3.00 is programming and has a more engineering focus while AP/ITEC 1010 3.00 is a more practical focus. Historically, our students struggled with ITEC 1000.

NURS courses stopped being offered or being open to our students.

7. Provide an updated mapping of the program requirements to the program learning outcomes to illustrate how the proposed requirements will support the achievement of program learning objectives.

   - Please find the attached program map.

8. If relevant, summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

   -External consultation was done with Prof. Radu Campeanu Undergraduate Program Director of the ITEC department, he confirmed by email that he is in agreement that course ITEC 1010 replaces ITEC 1000 and that spaces are available for our students in ITEC 1010.

   I consulted by email with Serban Dinca the former certificate coordinator about the need for HLST 3350 to be required course and he was in agreement about the change.

9. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

   No additional resources are required. Both courses are already delivered in our undergraduate program using the same mode of delivery.

10. Provide a summary of how students currently enrolled in the program will be accommodated.

    The certificate coordinator can give permission to enrolled students to take both courses as electives.

11. Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar. During this transition, students who took ITEC 1000 and/or HLST 4320 will be accommodated as they would be following the current requirements at the time they enrolled in the certificate.

Program: Health Informatics Certificate (Cross-Disciplinary Certificate in Health Informatics)
Degree Program: Cross-Disciplinary Certificate in Health Informatics
Effective Date: Fall 2023

Rationale: changes to course requirements as submitted to Faculty of Health Curriculum Committee

Current Calendar Copy (~~Strikethrough~~ items to be removed)	New Calendar Copy (Underline items to be added in revisions to existing programs)

Admission Requirements – Required Credits: 30 This certificate may be taken as a stand-alone certificate by prospective students who meet all of the following conditions. Applications are submitted to the Admissions Office at York University. 1. They hold community college diplomas with an overall grade point average of ~~B~~ or university degrees with an overall grade point average of ~~C~~ upon application for admission. 2. They are not enrolled in any undergraduate or graduate degree program at York University upon application for admission. 3. They will not be concurrently pursuing any undergraduate or graduate degree program at York University after admission into this certificate program. This certificate may also be taken concurrently with an undergraduate degree at York University. The prospective students apply through the School of Health Policy and Management and they must be enrolled in any undergraduate program at York University upon application. There is no restriction about the type of degree program in which students are enrolled concurrently. The concurrent undergraduate degree must be completed in order to obtain the certificate.	**Admission Requirements** – Required Credits: 30 This certificate may be taken as a stand-alone certificate by prospective students who meet all of the following conditions. Applications are submitted to the Admissions Office at York University. 1. They hold community college diplomas with an overall grade point average of 3.0 or university degrees with an overall grade point average of 1.70 upon application for admission. 2. They are not enrolled in any undergraduate or graduate degree program at York University upon application for admission. 3. They will not be concurrently pursuing any undergraduate or graduate degree program at York University after admission into this certificate program. This certificate may also be taken concurrently with an undergraduate degree at York University. The prospective students apply through the School of Health Policy and Management and they must be enrolled in any undergraduate program at York University upon application. There is no restriction about the type of degree program in which students are enrolled concurrently. The concurrent undergraduate degree must be completed in order to obtain the certificate.

Certificate Requirements *Notes*	Certificate Requirements *Notes*
1. Additional prerequisites that are not part of the certificate course requirements are waived for students registered in the certificate. 2. AP/ITEC 1000 3.00, HH/HLST 2040 3.00 and HH/HLST 3320 3.00 or AP/ITEC 3220 3.00 must be completed before taking electives or 4000 level courses. 3. Credit requirement: A minimum of 30 credits listed below among which at least 18 credits are unique to the certificate. 4. Residency requirement: At least 18 credits must be completed at York University. 5. Graduating with a certificate: i. Except where otherwise stated, a minimum cumulative grade point average of ~~4.0~~ (C) is required to satisfy certificate requirements. ii. Students must submit an application to graduate from this certificate program. Applications should be obtained from and filed with the School of Health Policy & Management. iii. For students who pursue this certificate program simultaneously with an undergraduate degree at York University, the certificate will not be conferred until they have successfully completed an undergraduate degree program at York University. Also, the certificate will not be retroactively awarded if they choose to only graduate with	1. Additional prerequisites that are not part of the certificate course requirements are waived for students registered in the certificate. 2. AP/ITEC 1000 3.00, HH/HLST 2040 3.00 and HH/HLST 3320 3.00 or AP/ITEC 3220 3.00 must be completed before taking electives or 4000 level courses. 3. Credit requirement: A minimum of 30 credits listed below among which at least 18 credits are unique to the certificate. 4. Residency requirement: At least 18 credits must be completed at York University. 5. Graduating with a certificate: i. Except where otherwise stated, a minimum cumulative grade point average of 1.70 (C) is required to satisfy certificate requirements. ii. Students must submit an application to graduate from this certificate program. Applications should be obtained from and filed with the School of Health Policy & Management. iii. For students who pursue this certificate program simultaneously with an undergraduate degree at York University, the certificate will not be conferred until they have successfully completed an undergraduate degree program at York University. Also, the certificate will not be retroactively awarded if they choose to only graduate with an

an undergraduate degree from York University. iv. Transcript notation that the requirements for a certificate have been completed will be made once the Registrar's Office has received notice from the School of Health Policy & Management. *A minimum of 30 credits as follows:* Core requirements (18 credits): • ~~AP/ITEC 1000 3.00~~ • HH/HLST 2040 3.00 • HH/HLST 3310 3.00 ~~or HH/NURS 3240 3.00~~ • HH/HLST 3320 3.00 or AP/ITEC 3220 3.00 • HH/HLST 4300 3.00 • ~~HH/HLST 4320 3.00~~	undergraduate degree from York University. iv. Transcript notation that the requirements for a certificate have been completed will be made once the Registrar's Office has received notice from the School of Health Policy & Management. *A minimum of 30 credits as follows:* Core requirements (18 credits): • AP/ITEC 1010 3.00 • HH/HLST 2040 3.00 • HH/HLST 3310 3.00 • HH/HLST 3320 3.00 or AP/ITEC 3220 3.00 • HH/HLST 3350 3.00 • HH/HLST 4300 3.00

A minimum of 12 credits selected from the following courses: • AP/ADMS 2511 3.00 • AP/ITEC 1620 3.00 • AP/ITEC 3020 3.00 • AP/ITEC 3210 3.00 • AP/ITEC 3230 3.00 • AP/ITEC 4010 3.00 • AP/ITEC 4040 3.00 • HH/HLST 3341 3.00 • HH/HLST 4310 3.00 or AP/ITEC 3010 3.00 • HH/HLST 4330 3.00 • HH/HLST 4340 3.00 • ~~HH/NURS 3210 3.00~~ • ~~HH/NURS 4210 3.00~~	A minimum of 12 credits selected from the following courses: • AP/ADMS 2511 3.00 • AP/ITEC 1620 3.00 • AP/ITEC 3020 3.00 • AP/ITEC 3210 3.00 • AP/ITEC 3230 3.00 • AP/ITEC 4010 3.00 • AP/ITEC 4040 3.00 • HH/HLST 3341 3.00 • HH/HLST 3500 3.00 • HH/HLST 4310 3.00 or AP/ITEC 3010 3.00 • HH/HLST 4320 3.00 • HH/HLST 4330 3.00 • HH/HLST 4340 3.00 • HH/HLST 4350 3.00
Course Substitutes Subject to course exclusions, program requirements/restrictions, and residence requirements, the following courses are acceptable substitutes for the purpose of meeting certificate requirements. PROGRAM COURSE SUBSTITUTE COURSE HH/HLST 2040 3.00 HH/NURS 3200 3.00 HH/HLST 4330 3.00 AP/ADMS 4300 3.00	**Course Substitutes** Subject to course exclusions, program requirements/restrictions, and residence requirements, the following courses are acceptable substitutes for the purpose of meeting certificate requirements. PROGRAM COURSE SUBSTITUTE COURSE HH/HLST 2040 3.00 HH/NURS 3200 3.00 HH/HLST 4330 3.00 AP/ADMS 4300 3.00

Health Informatics/Digital Health Certificate Map

Information technology is increasingly used in the management and administration of health care systems. From the electronic storage of patient records to the collection and analysis of health information, the use of electronic information is an increasingly important tool for modern practitioners and administrators.

Through seminars, laboratory, simulations, and self-directed term papers, the Health Informatics Certificate equips students with the skills and knowledge needed to pursue rewarding roles in this expanding area of health care.

The curriculum covers fundamental aspects of the Healthcare Delivery Systems, Health Information Management, and Health Information Systems based on the core competencies defined by the American Health Information Management Association.

Health Data Management domain is covered in many courses where students are learning how to collect and maintain health data (data elements, data sets, and databases) and to analyze health records for timeliness, completeness, accuracy, and appropriateness of health data. Healthcare information requirements and standards like documentation guidelines, policies and procedures to ensure organizational compliance with standards, and healthcare organization accreditation, licensing, and certification are also introduced. Students are learning how to use and maintain electronic applications and work processes to support clinical classification and coding (SNOMED-CT, ICD-10, etc.).

The Health Informatics Certificate covers aspects of **Health Services Organization and Delivery** such as the structure and organization of various health care providers, and the laws and certification standards under which they operate. Students learn how to differentiate the roles of various providers and disciplines throughout the continuum of healthcare and respond to their information needs. Healthcare Privacy, Confidentiality, Legal, and Ethical Issues are introduced for students to understand the legislative and regulatory process; health information laws and regulations; confidentiality, privacy and security policies, procedures and monitoring; and ethical standards of health information management.

The curriculum focuses in great extent on the **Information Technology and Systems**. Students learn how to use technology, including hardware and software, to ensure data collection, storage, analysis, and reporting of information. They apply knowledge of database architecture and design (such as data dictionary) to meet specific business requirements and learn how to query databases and generate reports to facilitate information retrieval using appropriate software. Data security and integrity of Healthcare Information Systems is explored by studying confidentiality and security measures to protect electronic health information, and how to protect data integrity and validity using software or hardware technology. The program covers how healthcare facilities implement, integrate, interface, test, and support health information systems, and ergonomics and workflow process design.

The program learning outcomes are assessed through various means such as case studies, academic papers, hands-on exercises in the lab, health databases and information systems implementation projects, quizzes, and exams.

Program Learning Outcomes(PLOs)

1.Systematically select, interpret and synthesize available information in a clear and succinct manner verbally and in writing using proper sentence structure and citation formats.
2.Critically appraise evidence, perspectives and the assumptions and limitations to various methodological, theoretical and disciplinary approaches in health studies.
3.Work collaboratively in teams to analyze issues, perspectives and solve problems in health policy, management and informatics.
4.Act responsibly and with integrity as expected of professionals in a career that recognizes the social determinants of health and advances health equity.
5.Plan and carry out quantitative and qualitative analyses using an interdisciplinary perspective that considers tensions between evidence and values.
6.Describe and apply health policy concepts to inform decision making at a micro, meso and macro level.
7.Describe and apply health management concepts to assess and improve health system performance.
8.Describe and apply health informatics concepts to design and evaluate health information systems and technology solutions.

Level of Learning Outcome				
Introductory (I): Teaching and learning activities focus on basic concepts and skills. Students recall/explain concepts. **Developed (D):** Teaching and learning activities reinforce concepts and skills. Students apply procedures or analyze concepts. **Mastery (M):** Teaching and learning activities focus on the use of concepts and skills. Students analyze concepts at multiple levels of complexity, evaluate decisions, or create new ideas. Students are assessed on graduation-level proficiency in the outcome.				
Methods of Assessment				
01 Multiple choice test questions **02** Written exams (short/long essay) **03** Online/Moodle quizzes **04** Online modules **05** Participation **06** Collage	**07** Class discussions **08** Group presentation **09** Scholarly discussion papers **10** Group project or learning contract **11** Reflective writing or journaling **12** Problem-solving assignments	**13** Project proposal or Team charter **14** Policy Brief or Briefing note **15** Policy analysis or recommendations **16** Research paper/essay **17** Reading Scholarly summaries **18** Annotated bibliography	**19** Peer or self-evaluation **20** Case study **21** Financial analysis **22** Statistical analysis of data **23** Hands-on activities **24** Use of Electronic Health records	**25** Database design and implementation **26** Database queries **27** Quality Management Report **28** Placements or observations **29** Literature review **30** Survey participation

Program Required Courses:

Courses (Program Requirement) * implies 'one of'		**Program Learning Outcomes**							
		1 Systematically select, interpret, and synthesize available …	**2** Critically appraise evidence, perspectives and …	**3** Work collaboratively in teams to analyze issues…	**4** Act responsibly and with integrity as expected …	**5** Plan and carry out quantitative and qualitative …	**6** Describe and apply health policy concepts …	**7** Describe and apply health management concepts …	**8** Describe and apply health informatics concepts …
ITEC 1010 3.00	Level taught (assessed)	I (I)			I (I)				I
	Assessment methods	1, 3, 4, 12, 23			1, 3, 4, 12, 23				1, 3, 4, 12, 23
HLST 2040 3.00	Level taught (assessed)	I (I)	I (I)						I (I)
	Assessment methods	1, 3, 4, 5, 7, 11, 17	4, 5, 7, 11, 17						1, 3, 4, 5, 7, 11, 17
HLST 3310 3.00	Level taught (assessed)	D (D)	D (D)						D (D)
	Assessment methods	1, 3, 4, 5, 7, 23, 24	1, 3, 4, 5, 7, 23, 24						1, 3, 4, 5, 7, 23, 24
HLST 3320 3.00	Level taught (assessed)	D (D)	D (D)	D (D)					D (D)
	Assessment methods	1, 2, 3, 4, 5, 7, 8, 23, 25, 26	1, 2, 3, 4, 5, 7, 8, 23, 25, 26	1, 2, 3, 4, 5, 7, 8, 23, 25					1, 2, 3, 4, 5, 7, 8, 23, 25
	Level taught (assessed)	D (D)	D (D)	D (D)					D (D)

Courses (Program Requirement) * implies 'one of'		Program Learning Outcomes							
		1 Systematically select, interpret, and synthesize available …	**2** Critically appraise evidence, perspectives and …	**3** Work collaboratively in teams to analyze issues…	**4** Act responsibly and with integrity as expected …	**5** Plan and carry out quantitative and qualitative …	**6** Describe and apply health policy concepts …	**7** Describe and apply health management concepts …	**8** Describe and apply health informatics concepts …
HLST 3341 3.00 *	Assessment methods	1, 3, 4, 5, 7, 8, 16, 29	1, 3, 4, 5, 8, 16, 29	1, 3, 4, 5, 7, 8, 16, 29					1, 3, 4, 5, 7, 8, 16, 29
HLST 3350 3.00	Level taught (assessed)	M (M)	M (M)	M (M)	**M(**M)	**M(**M)	**(**D)	**(**D)	M (M)
	Assessment methods	5, 7, 8, 10, 16, 19, 20, 23, 29	1, 2, 5, 7, 17, 20	5, 7, 8, 10, 13, 19, 20, 23, 29	5, 7, 8, 10, 17, 23, 29	5, 7, 8, 10, 17, 23, 29	5, 7, 8, 10, 17, 20, 29	5, 7, 8, 10, 20, 29	1, 2, 5, 7, 8, 10, 15, 17, 19, 20, 23, 29, 30
HLST 3500 3.00 *	Level taught (assessed)	M (M)	M (M)	M (M)	**M(**M)	**M(**M)	**(**D)	**(**D)	D (D)
	Assessment methods	5, 7, 8, 10, 16, 19, 20, 23, 29	1, 2, 5, 7, 17, 20	5, 7, 8, 10, 13, 19, 20, 23, 29	5, 7, 8, 10, 17, 23, 29	5, 7, 8, 10, 17, 23, 29	5, 7, 8, 10, 17, 20, 29	5, 7, 8, 10, 20, 29	1, 2, 5, 7, 8, 10, 15, 17, 19, 20, 23, 29, 30
HLST 4300 3.00	Level taught (assessed)	M (M)	M (M)	M (M)			M (M)	M (M)	M (M)
	Assessment methods	7, 8, 10, 16, 17, 18, 20, 29	7, 8, 10, 16, 17, 18, 20, 29	7, 8, 10, 16, 17, 18, 20, 29			7, 8, 10, 16, 17, 18, 20, 29	7, 8, 10, 16, 17, 18, 20, 29	8, 10, 16, 17, 18, 20, 29
HLST 4310 3.00 *	Level taught (assessed)	I (I)	M (M)	M (M)	I		I (I)	M (M)	M (M)
	Assessment methods		7, 15, 20, 29	4, 8, 10, 23, 29			1, 7, 20, 29	1, 2, 7, 20, 23	1, 2, 7, 9, 10, 14, 20, 23, 25, 26, 29
HLST 4320 3.00 *	Level taught (assessed)	M (M)	M (M)	M (M)	**(**M)		**(**D)	**(**D)	M (M)
	Assessment methods	5, 7, 8, 10, 16, 19, 20, 23, 29	1, 2, 5, 7, 17, 20	5, 7, 8, 10, 13, 19, 20, 23, 29	5, 7, 8, 10, 17, 23, 29		5, 7, 8, 10, 17, 20, 29	5, 7, 8, 10, 20, 29	1, 2, 5, 7, 8, 10, 15, 17, 19, 20, 23, 29, 30
	Level taught (assessed)	M (M)	M (M)	M (M)	D (D)		M (M)	M (M)	

Courses (Program Requirement) * implies 'one of'		**Program Learning Outcomes**							
		1 Systematically select, interpret, and synthesize available …	**2** Critically appraise evidence, perspectives and …	**3** Work collaboratively in teams to analyze issues…	**4** Act responsibly and with integrity as expected …	**5** Plan and carry out quantitative and qualitative …	**6** Describe and apply health policy concepts …	**7** Describe and apply health management concepts …	**8** Describe and apply health informatics concepts …
HLST 4330 3.00 *	Assessment methods	1, 2, 4, 7, 8, 10, 14, 15, 16, 26, 29	1, 2, 7, 8, 10, 14, 15, 16, 29	7, 8, 10, 14, 16	2, 15, 16		7, 8, 10, 14, 15, 16	1, 2, 4, 7, 8, 10, 14, 15, 16	
HLST 4340 3.00 *	Level taught (assessed)	M	M (M)	D (D)	I	D (I)	M (M)	M (M)	
	Assessment methods		3, 7, 16, 17, 20	5, 7, 16, 17		16	7, 16, 17	7, 16, 17	
HLST 4350 3.00 *	Level taught (assessed)	M	M (M)	D (D)	I	D (I)	M (M)		M (M)
	Assessment methods		3, 7, 16, 17, 20	5, 7, 16, 17		16	7, 16, 17		3, 7, 16, 17, 20

RE: Cross-Disciplinary Certificate in Health Informatics - Requesting support for change to requirements

Radu I Campeanu <campeanu@yorku.ca>
Mon 10/17/2022 2:51 PM

To: Lynda van Dreumel <lyndavd@yorku.ca>
Cc: Christo El Morr <elmorr@yorku.ca>

Hello Lynda,

Our office confirmed that we have enough space in ITE1010 to accommodate your students.
Also, I forgot to tell you that I agree that ITEC1010 is better than ITEC1000 for the Certificate in Health Informatics.

Cheers,
Radu

From: Radu I Campeanu
Sent: October 17, 2022 2:04 PM
To: Lynda van Dreumel <lyndavd@yorku.ca>
Cc: Christo El Morr <elmorr@yorku.ca>; shpm <shpm@yorku.ca>; Ellis Lau <elau@yorku.ca>
Subject: RE: Cross-Disciplinary Certificate in Health Informatics - Requesting support for change to requirements

Hello Lynda,

I checked and this academic year we have 6 sections of ITEC1010 and 4 sections of ITEC1000. Therefore I believe that we have enough space in ITEC1010. I copy our Administrative Coordinator asking her opinion too.

Cheers,
Radu

From: Lynda van Dreumel <lyndavd@yorku.ca>
Sent: October 17, 2022 10:20 AM
To: Radu I Campeanu <campeanu@yorku.ca>
Cc: Christo El Morr <elmorr@yorku.ca>; shpm <shpm@yorku.ca>
Subject: Cross-Disciplinary Certificate in Health Informatics - Requesting support for change to requirements

Dear Radu,

I hope you had a productive reading week. We have not formally met, but I am introducing myself electronically today - Hello! I'm the current UPD for the School of Health Policy and Management.

SHPM is proposing some small changes to the requirements for the Certificate in Health Informatics, and one of the changes is related to ITEC:

https://calendars.students.yorku.ca/2022-2023/programs/HH/cross-disciplinary-certificate-in-health-informatics

I've copied Christo El Morr who is our current Coordinator of the Certificate. Currently, students take ITEC 1000 3.00, however we would like to change the requirement to ITEC 1010 3.00 as we feel that ITEC 1010 3.00 might align better with the program learning outcomes of the Certificate.

From your end, would this be possible, i.e. would you have enough space in ITEC 1010 3.00 to accommodate this small cohort of students?

Please let me know if it would be helpful to chat and/or if we can provide additional information. On a related note, as of Fall 2023 the name of the certificate will change to Cross-Disciplinary Certificate in Digital Health.

Take care and talk soon,
Lynda

Lynda van Dreumel, O.T. Reg (Ont.) (she/her) • Assistant Professor
Undergraduate Program Director, School of Health Policy & Management

Learn more about PATHS: Pedagogy that Aids Transition for Higher-Ed Students

YORK UNIVERSITY

Stong College Room 338 • 4700 Keele Street

Toronto ON • Canada M3J 1P3

lyndavd@yorku.ca • www.shpm.info.yorku.ca

York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.

Understanding the Land Acknowledgement: https://youtu.be/qNZi301-p8k