York University Senate

Notice of Meeting

Thursday 16 December 2021, 3:00– 5:00pm

Via Videoconference

AGENDA

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15min

1. Chair's Remarks (M. Roy)
2. Business arising from the Minutes
3. Inquiries and Communications
   a. Report of the Academic Colleague to the Council of Ontario Universities (B. Spotton Visano) 1

45min

4. President's Items (R. Lenton)
   a. Addressing Anti-Black Racism: A Framework for Black Inclusion and the Action Plan for Inclusion: A Living Document for Action

   The President, VPEC Sheila Cote-Meek and Carl James, Special Advisor on Equity and Representation will speak to the planning documents and facilitate a discussion with Senators.

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6. Academic Policy, Planning and Research (B. Spotton Visano) 12

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   a. Establishment of BASc degree in Digital Technologies, Markham campus, Lassonde School of Engineering (Appendix A, page 27)
   b. Revision of the BFA degree program in Integrative Arts to BFA degree program in Creative Technologies, Markham Campus, School of Arts, Media, Performance and Design (Appendix B, page 105)
   c. Establishment of a Disciplinary Certificate in Creative Writing Across Contexts, Glendon (Appendix C, page 146)
   d. Establishment of a Field in Health System Management and Health Data Analytics in the MA and PhD degree programs in Health, Faculty of Health (Appendix D, page 167
   e. Revisions to requirements for the Diploma in German and European Studies, Liberal Arts and Professional Studies (Appendix E, page 237)

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8. Tenure and Promotions

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P. Robichaud, Secretary

Report to Senate of the Academic Colleague to COU on the discussions and updates from its meetings October 13 & 20, 2021

3 December 2021

1. Conversation with Sean Corner, Associate Dean (Academic), Faculty of Humanities, McMaster University**

Dr. Sean Corner joined the colleagues to discuss the value of arts and humanities, focusing on the creative industries and three new programs at McMaster.

An education in the arts and humanities promotes skills and values such as critical thinking, analysis, problem-solving, communication, historical and cultural perspectives, creative expression and self-examination. These values contribute to a richer existence and are recognized by employers as desirable "soft skills."

In the discussion that followed, Colleagues discussed the role of the humanities in developing emotional intelligence, the challenge of communicating the value of a liberal arts education to a skills-focused job market, and the importance of valuing benefits of education other than job-readiness.

2. COU Update

2021-22 Provincial Advocacy

COU is currently finalizing a comprehensive advocacy campaign in support of key sector interests. This work is ongoing and captures work intended to influence the Spring Budget and the Provincial election currently scheduled for June 2, 2022.

COU's advocacy is taking place within the context of a provincial election in less than a year, and a government that is primarily focused on ensuring a successful school year, and avoiding another major economic shutdown. These factors, paired with the growing concern regarding the Delta variant have created a challenging environment for advocacy with much of the political "bandwidth" occupied with these drivers.

The strategy for advocacy is to advance the sector's recommendations by following a two-pronged approach that leverages both internal and external advocacy. Internally, COU will engage the government to discuss options for revenue flexibility that can ensure the financial sustainability and competitiveness of Ontario universities. Externally, COU will develop a public-facing advocacy campaign to help build consensus in the public about the role universities play in developing a skilled workforce, attracting investment and talent, and as drivers of the provincial and local economies.

The Financial Sustainability and Competition Working Group (FSC WG) was struck to lead the sector's review and analysis of internal policy and advocacy recommendations linked to university funding and support. The WG met over the summer to consider government, student and institutional interests and priorities, and to develop sector-wide specific policy/advocacy options for consideration by Executive Heads.

COU will provide the sector with more information over the coming weeks.

Red Tape Bill: Supporting People and Businesses Act

On October 7, the provincial government released Bill 13, Red Tape Bill: Supporting People and Businesses Act. The corresponding announcement outlines several new government-wide initiatives that will be included in the Bill and that directly or indirectly impact universities.

Of particular note are three key advocacy asks for the college sector:

- Expansion of college degree-granting caps;
- Exploring options for expanding the degree-granting authority of colleges; and
- Exploring options to expand credentials in the public college system to include "applied" Master's degrees

The Ministry is also exploring options to reduce the administrative burden associated with multiple transfer payment agreements to the same transfer payment recipient. The government is seeking, where possible, to include multiple grants into a consolidated transfer payment agreement. COU advocated for these changes in our red tape recommendations to the government.

Other announcements

- Creating tuition fee transparency for university and college students: The government is aiming to provide students with increased accountability, transparency and clarity by providing details of tuition fees at Ontario's postsecondary institutions.

- Reducing duplication of reporting requirements for the Ontario Student Opportunity Trust Fund / Ontario Trust for Student Support: The legislation will remove the online reporting requirements for endowments to reduce duplication and benefit colleges and universities by easing the administrative burden. The requirement for reporting through audited financial statements will remain in place to ensure adequate oversight and accountability.

- Removing barriers to entrepreneurial activities for postsecondary educational institutions: The government is seeking to simplify how Ontario's postsecondary

institutions enrol international students, specifically for registered private career colleges and Indigenous institutes. These institutions will face fewer barriers in achieving designation as learning institutions under Ontario's International Student Program.

- Reviewing the Ontario Student Assistance Program performance requirements for private postsecondary institutions: The Ministry will review the performance requirements for private postsecondary institutions approved for the Ontario Student Assistance Program (OSAP) to ensure they continue to be "…relevant and responsive to student needs within a growing and evolving sector." The Ministry anticipates this review will create new opportunities and reduce red tape for private postsecondary institutions approved for OSAP.

- Supporting digital learning for private career colleges: The Ministry is proposing changes to approvals for online delivery of training at private career colleges to support continued flexible delivery options to students.

  COU has raised concerns about specific items in the bill with the government and will be consulting with members on a path forward. COU will also undertake a deeper analysis for additional impacts in the coming days.

Strategic Management Agreements

During the early stages of the pandemic, the ministry announced the de-coupling of funding from performance for the first two years of SMA3 to mitigate the impact of COVID on SMA3 performance evaluations. Reporting and evaluation of performance continue as normal.

The ministry is starting the Year 2 performance evaluation process. Once that is finished, there will be an opportunity for the sector to review Year 3 allowable performance targets and to amend institutions' weighting of metrics for future years.

The ministry has announced a technical engagement later this year to discuss the two reporting metrics that will be activated in Year 3: Skills and Competencies, and Faculty Activity.

COVID and Re-Opening

COU advocated throughout the summer for Public Health Directive/MCU mandate for vaccination for on-campus activities to permit a safe campus re-opening. On Aug. 24, the Council of Ontario Medical Officers of Health wrote to University and College Presidents and Principals strongly recommending mandatory vaccination for all on-campus activities, as soon as operationally possible. On Aug. 31, MCU released their

Postsecondary Education Health Measures Framework for Fall 2021, followed by a technical briefing on Sept. 2. The Ontario Medical Officer of Health's directives were included and formed the basis of the Framework. In the guidance, institutions with mandatory vaccination policies for on-campus activities are no longer required to enforce a two-meters distance within their instructional spaces. Masks are still required indoors. Institutions continue to develop employment policies and Medical and Human Rights exemptions procedures.

3. Presentation by Katarina Todić on Private Institutions and the Degree-Granting Landscape in Ontario

COU Senior Policy Analyst Katarina Todić presented her research on private universities and colleges in Ontario, including degrees offered, current PEQAB applications, tuition and admission requirements.

Excerpts from Presentation Slides:

Legal Framework for Private Degree-Granting in Ontario

Publicly-assisted universities in Ontario have authority to grant degrees established in their individual legislative acts.

- The Post-Secondary Education Choice and Excellence Act, 2000 (PSECEA) provides authority for the minister responsible for postsecondary education to allow organizations, including publicly-assisted colleges, and offshore and private institutions, to provide degree-level education in Ontario.
- PSECEA allows use of university nomenclature and degree-granting only to institutions authorized by an Act of Legislature (a.k.a. publicly-assisted universities) or those which have received ministerial consent.
- PSECEA established the Postsecondary Accountability Quality Assessment Board (PEQAB), whose mandate is to develop recommendations to the minister regarding granting of consents.

Private Universities

Currently there are six private institutions which have been granted ministerial consent to use "university" in Ontario and to offer degrees

- Canadian-based private institutions:
    - Yorkville University
    - International Business University
- US-based private institutions:
    - Niagara University
    - Northeastern University

- Canadian-based Christian institutions:
    - Redeemer University
    - Tyndale University

Current Postsecondary Accountability Quality Assessment Board (PSAQAB) Applications of Note

- In May 2021, the Humanities Digital Degree Project submitted an application for use of "university" and to offer Bachelor degrees in History, Philosophy, English, and French.
- In June 2021, Global University Systems Canada submitted a series of applications to operate as "Niagara Falls University" and offer Bachelor and Master's degrees in Digital Media, Business, Data Analytics, and Biomedical Sciences.
- OCAV submitted letters urging rejection of the two applications.
- Both applications are currently pending.

Degree-Level Programming in Ontario (Offshore Public & Ontario Colleges)

8 public universities from other jurisdictions:

5 from other Canadian provinces:

- Athabasca; Cape Breton; Dalhousie; Mount Saint Vincent; UNB.

3 from other countries:

- Central Michigan University (US); Institute of Technology Sligo (Ireland); and University of Mannheim (Germany).

17 of 24 of Ontario's publicly-assisted colleges:

- 60% of college degree programs are concentrated within 4 colleges in the Toronto–Waterloo corridor (Conestoga, Humber, Seneca, Sheridan).
- Enrolment: ~23,000 in 2018-19 (fall term FT headcounts).
- This represents less than 10% of total college enrolment.
- Compare to ~394,000 university bachelor enrolment for the same year (fall term FT headcounts).

Private Career Colleges in Ontario

- There are over 500 private career colleges (PCCs) in Ontario.
- The sector consists of approximately 45,000 students and annually produces more than 33,000 graduates.

- PCCs are governed by the Private Career Colleges Act, 2005, and their vocational programs must be approved by the Superintendent of Private Career Colleges.
- Approximately 150 PCCs (with 240 campuses in 80 communities) are members of Career Colleges Ontario (CCO).

YORK UNIVERSITÉ UNIVERSITY

PRESIDENT'S **KUDOS REPORT**

DECEMBER 2021

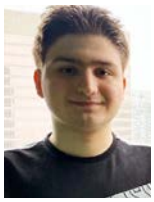
A project led by Lassonde School of Engineering Professor Ali Sadeghi-Naini is advancing research in predicting cancer treatment outcomes. The quantitative MRI biomarker developed in this project can predict whether a patient's tumor is likely to be controlled by stereotactic radiotherapy (SRT) or if the treatment is likely to fail.

Lara Ubaldi, Director, Student Advising and Academic Services, has been awarded the inaugural Lynda Tam Guiding Light and Legacy Award, which was established in honour of Lynda Tam, a long-serving leader at York.

The Faculty of Liberal Arts & Professional Studies named Professor Daniel Kikulwe as the new Special Advisor on Student Success. An Associate Professor in the School of Social Work, Kikulwe's area of research focuses on child welfare practices, policies, families, and immigration.

Four Faculty of Science professors received grants from the Academic's Indigeneity in Teaching & Learning Fund to advance three projects that incorporate Indigenous knowledges and perspectives into teaching and learning. Professors Tamara Kelly, Paula Wilson, Amenda Chow and Pamela Sargent are recipients of the grants.

Associate Professor Elsabeth Jensen has been elected president of the Clinical Nurse Specialist Association of Canada. Jensen, a faculty member in the Faculty of Health's School of Nursing, will lead the association for a two-year term until the end of 2023.



Lassonde electrical engineering student Erfan Nouraee earned a bronze medal for his Photon Detector System at the 2021 International Invention and Innovation Competition hosted by the Geneva-based International Federation of Inventors Association.

Eight students representing the Schulich School of Business finished in the top two spots at the Data Visualization and Datathon virtual competition hosted by the University of New Brunswick's program for International Business and Entrepreneurship.

First-place: Team Data Spring (Master of Business Analytics Program):
Xinke (Skylar) Wang, Jiannan Zhao, Xiingkai (Joseph) Wu, Yangming (Katherine) Ye

Second-place: Team Rocket (Master of Management in Artificial Intelligence Program):
Wenhui (Eva) Ma, Shengrong (Jack) Hong, Wangshu (Winston) Peng, Junyi (Adrian) Peng

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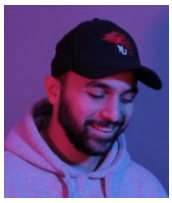
The York U Alumni Awards took place on November 18, in celebration of alumni who exemplify the values of York University, have made remarkable contributions to their fields, and changed the world for the better. Leaders honoured at this year's awards include Dr. Earle Nestmann (MSc '71, PhD '74); Christopher House (BFA '79); Dr. Pamela Ohashi (BSc Hons '82); and Weyni Mengesha (BFA '05).



Second-year film student Abraham David received four awards for his film *My Girl, Skelly*. The film was initially produced for a project as part of David's first year Film Production program in the School of Arts, Media, Performance and Design. David received Best Short Film from the Toronto Film Magazine Fest Summer Season Award. Soon after, The Great Canadian Sci-Fi Film Festival recognized *My Girl, Skelly* in two categories: Best Short in Code Red Block 2021 and Best Canadian Film. On December 1, David received his most recent recognition in the Awards of Commendation category with Canada Shorts Film Festival.

Schulich Professor Moshe Milevsky played a key role in the largest retirement documentary film in the history of film. The documentary film, *The Baby Boomer Dilemma: An Exposé of America's Retirement Experiment*, reveals the shocking risks around retirement savings in America and provides a troubling reality check for many who expect a safe retirement income in the future.

A short story written by School of Kinesiology and Health Science Professor Lucia Gagliese about a healthcare worker coping during the pandemic will appear in *The Best Canadian Stories 2021*, a prestigious Canadian short fiction publication.

York Criminology Professor James Sheptycki is the recipient of the 2021 Allen Austin Bartholomew Award for best-published paper of the year by the *Australian and New Zealand Journal of Criminology* for his essay titled "The Politics of Policing a Pandemic Panic."

The Faculty of Liberal Arts & Professional Studies is celebrating the fourth annual Dean's Award for Research Excellence by recognizing 54 students for their research achievements. Over the summer, each student played an integral role in coordinating projects that added valuable scholarly inquiry to the social sciences, humanities, and professional studies. The recipients are:

Eyram Agbe, Abdirahman Ahmed, Muhammad Ahsan, Matthew Andary, Kimiya Asadi, Chantal Barry, Aysha Campbell, Muzammil Chatha, Theodora Contanas, Emily Coussons, Nina Maria de Meira Borba, Erin Edghill, Mariam Elzeiny, Stefan Fassler, Negar Fathi, Dylan Gruspier, Morag Hegge, Nissaba Hido, Shehnaz Islam, Golgisoo Jafari, Jasraj Khokhar, Eunhee Kim, Melissa La Roche, Aditya Lakhina, Shanshan Lao, Renée Lefebvre, Elijah Leotaud, Emma Litschko, Christina Love, Reem Mohammed, Michelle Molubi, Sophie Morgan, Leah Nicholson, Munzungu Nzeyedioperf, Jessica Oliveira Da Silva, Noorin Pattni, Tiana Putric, Anika Rahman, Jennifer Raymer, Sayyed Raza, Althea Elise Reyes, Jellisa Ricketts, Rachel Russell, Humayra Rashid Safa, Jennifer Santin, Maria Beatrice Serdon, Lorenzo Serravalle, Tushar Sroya, Kiana Therrien-Tomas, Devin Stroink, Serina Walimohammad, Wei Wang, Thomas Worthington, and Barbra Yagoo.

Six York University alumnae have been recognized by Women's Executive Network (WXN) Canada's Most Powerful Women: Top 100 list for creating positive change in the workplace by advocating for workforce diversity and inspiring tomorrow's leaders:

- Charlie Wall-Andrews (MA '14, School of the Arts, Media, Performance & Design)
- Angela Brown (MBA '83, Schulich School of Business)
- Lena Azzou (BA '05, Faculty of Liberal Arts & Professional Studies)
- Sadaf Parvaiz (BBA '02, Schulich School of Business)
- Kashmera Self (BA '99, Faculty of Liberal Arts & Professional Studies)
- Ingrid Macintosh (BA '85, Glendon College).

APPOINTMENTS

Susana Gajic-Bruyea has been appointed Vice-President, Advancement. Her initial five-year term commences January 1, 2022.

Lisa Philipps has been re-appointed as Provost & Vice-President Academic for an additional five-year term, commencing July 1, 2022, and ending June 30, 2027.

Executive Committee – Report to Senate

At its meeting of 16 December 2021

For Information

a. Monitoring the Disruption

Up to date information was provided to the Executive Committee by the Provost on the status of the implementation of the vaccination mandate requirements in conjunction with the winter term return to campus planning. A high percentage of the full University community has now disclosed their vaccination status and within that group of faculty members, staff and students compliance has reached the 95% mark.

1 December 2021 was the deadline for students to provide the University their vaccination record to remain eligible to attend the winter term in-person delivery of courses. A relatively moderate number of students did not meet that deadline. Concerted efforts are being taken to connect with each one to determine their intentions on meeting the compliance requirements. Where necessary de-enrolment of non-compliant students will commence on 13 December 2021.

The Executive Committee also decided this month on a matter pertaining to the disruption. It approved for the Winter 2022 term an adjustment to an academic regulation governing grades for the Juris Doctor (JD) degree program housed in the Osgoode Hall Law School as a form of accommodation to mitigate the impact of the pandemic disruption. The temporary measure prevents a student's participation grade from being affected in the event they are *prohibited* from coming to campus on the basis of the questions in the YU Screen tool.

All decisions taken by the Senate Executive Committee under the auspices of the *Senate Policy on Academic Implications of Disruptions or Cessations of University Business Due to Labour Disputes or Other Causes* are communicated to Senate and posted on the special COVID-19 information page on the Senate website - https://secretariat.info.yorku.ca/covid-19-information-and-decisions-pertaining-to-academic-activities/ .

b. Senate Rules Review 2021-2022

A review of the Rules of Senate is one of Executive Committee's priorities this year, consistent with the prescribed timing for the exercise articulated in the Rules. The Committee prepared a preliminary inventory of the sections of the Rules for review in this round. The list will be shared with Senators in the coming days to canvass for any

other aspects of the Senate Rules that should be in scope in this year's review. It is expected that Senate Executive will discuss proposed revisions in March/April, with a recommendation to proceed to Senate at the April (Notice of Motion) and May meetings.

c. Review of Faculty Council Rules and Procedures

The Executive Committee reviewed and endorsed changes to the rules and procedures for the School of Arts, Media, Performance and Design, which includes a newly established Equity, Diversity, Decolonization, and Inclusion (EDDI) standing committee and expansion of its Executive Committee composition to include the Chair of the EDDI Committee. The Committee was pleased to note that, through its governance structures and processes, AMPD is taking up the call to the University community to integrate an equity, diversity and inclusion lens locally. This complements the direction taken in this domain by several other Faculty Councils to date.

d. Other Business for Which Due Notice Has Been Given

The Executive Committee considered a hortative motion submitted by two Senators that seeks to have Senate express its opinion on the *Anti-Black Racism Framework* and the *Action Plan on Black Inclusion*. This followed on Executive's discussion the prior month of a request for a discussion of the two documents at Senate. Senate Executive is liaising with the two Senators before confirming the motion is in order and determining its readiness for Senate consideration at a meeting.

However, to support the goal of enhancing Senate's knowledge of the *Anti-Black Racism Framework* and the recently issued *Action Plan on Black Inclusion*, time has been allotted at the December meeting of Senate for a presentation and discussion of the strategy and array of initiatives the two documents set out. This item of business is being accommodated under the President's Items, that will be jointly facilitated by the President and the Vice-President, Equity, People and Culture. Links to the Framework and Action Plan are set out on the Senate agenda page. Senators are strongly encouraged to review the documents in preparation for the discussion at the Senate meeting.

e. Senate Meetings in Winter 2022 Term

Executive has begun to discuss the mode of delivery of Senate meetings going forward. No decision has been made at this time to alter the current mode of virtual meetings. As such, the January meeting of Senate will be held via Zoom. Senators may be canvassed for input on meeting options early in the new year.

Mario Roy, Chair
Chloë Brushwood Rose, *Vice-Chair*

Academic Policy, Planning and Research Committee

Report to Senate

At its meeting of 16 December 2021

For Information

a. Markham Campus

In its role to provide oversight of major academic initiatives APPRC continues to monitor and track the progress of the Markham campus program proposals through the governance paths to Senate. The review of curriculum proposals must be done in accordance with the criteria and standards of the *York University Quality Assurance Procedures* (YUQAP); Faculty committees, Councils and Senate committees are conducting their respective reviews in alignment with this governing legislation. The launch of the Markham campus for the FW 2023-2024 academic year sets timelines for the approval of the programming that accommodate the external approval process for new programs by Quality Council and provide lead time for both the administrative implementation work (including the Ontario University Application Centre deadlines), and recruitment strategies. Careful management is required therefore to ensure both the integrity of the collegial assessment exercise and a timely flow of the business through the governance processes. The Senate APPRC and ASCP committees are working to consult with the Faculties on expected progress. APPRC will keep Senate apprised of the status of the new campus initiative.

b. Academic Planning Forum 2022

Each year APPRC hosts a pan-university planning forum. The forums offer unique opportunities for timely, in-depth explorations of academic planning opportunities pivoting around a topic or specific initiative designed to advance University Academic Plan objectives. The Committee signaled to Senate earlier in the autumn through the communication of its 2021-2022 priorities, that the theme contemplated for this year's forum is the *Future of Pedagogy*. A broad theme, the Committee will narrow the ultimate topic for the planning session. The goal of the forum is to foster dialogue on the direction the University wants to go on the delivery of academic programming. The forced shift to remote delivery caused by the pandemic is surfacing consequences and opportunities for teaching and learning. How the University will choose to respond in the medium and long-term needs to be taken up; APRPC wishes to start the conversation.

The date for the virtual forum has been confirmed as **Thursday, 7 April 2022**. It is contemplated to be a half-day event held in the morning. Focussed on a topic of such critical significance to the University, Senators are asked to plan to attend and encourage Faculty / School colleagues to join as well to share views on defining the path ahead. Once the agenda for the forum is defined and arrangements confirmed, an invitation will be widely circulated within the York community, including of course to Senate.

c. Discussion of the Action Plan for the implementation of the Framework to Address Anti-Black Racism

APPRC advised Senate in November that the Committee had begun to discuss the Action Plan to the Framework to Address Anti-Black Racism to reflect on possible initiatives that align with APPRC's mandate. That discussion continued at is meeting on November 25. From its broad reflections on the then draft Action Plan, the Committee identified Senate-related areas where attention on making change could be focused, such as curriculum review, tenure and promotion evaluation, and resource sufficiency of ORUs with research mandates on the diasporas of Africa, Latin America and the Caribbean. The Committee's input will be shared with the Senate Executive Sub-committee on Equity through the APPRC member designated to participate on the Sub-committee. Additionally, in conjunction with the APPRC annual planning forum, the Committee will explore how to thread in the anti-Black racism lens to its theme of the Future of Pedagogy.

d. School of Medicine Planning

In its responsibility to monitor and contribute to major academic planning initiatives, the Committee met with the President on the development of a proposal for a medical school for submission to the Province. The establishment of a medical school at York has long been an aspiration of the University; it has been a goal articulated in successive University Academic Plans and long-term planning documents such as Vision 2020 and *Building a More Engaged University: Strategic Directions for York University 2010-2020*.

The initiative is in a planning phase, building on the highly developed proposal prepared in 2010. The President has struck a School of Medicine Steering Committee to assist with the development of the high level vision, lead advocacy with both internal and external stakeholders, foster strategic partnerships and prepare the case for support for a School at this time. Being imagined is a distinct School of Medicine for York that reflects the University's interdisciplinary approach and commitment to health

and wellness within a model of integrated health learning. The submission of the proposal to the Province is targeted for spring 2022. Planning will continue in step with the Province's decision, with APPRC and Senate's input and, ultimately, approval.

APPRC will share updates and facilitate discussions with Senate as appropriate in the coming months.

e. **2021-2022 Fostering the Future of Artificial Intelligence: Report from the York University Task Force on AI & Society**

Vice-President Asif provided a comprehensive briefing to the Committee on the Report from the York University Task Force on AI & Society. In 2018 the Vice-President Research & Innovation established a pan-university task force to examine options for building and featuring York's research strengths in Artificial Intelligence, and to generate recommendations how York can advance research and take advantage of research, scholarship, and academic opportunities in AI. In November the Task Force released its report which provides a series of high-level recommendations and forward-looking steps towards positioning York as a leading centre of excellence for interdisciplinary teaching and research in the application of AI in different domains. Report from the York University Task Force on AI and Society.

There are 10 key recommendations from the report, focused primarily on expanding York's faculty strength through strategic cluster hiring of researchers with interests in core AI topics, developing new academic programs and research partnerships, and establishing new AI-based Organized Research Units (ORUs). In taking up the recommendations, strategic decisions will be made about how to invest funds to galvanize research to make contributions to the field of AI and distinguish York in this critical area.

APPRC members encouraged that University initiatives pursued in the AI domain should include perspectives on the impact of AI on teaching and students' learning experience from its use in pedagogy. Highlighted for consideration too was the importance of ethical and equal university-industry partnerships in any external collaborations on AI research.

f. Thanks and Well Wishes

The close of the fall term sees two members of APPRC completing their time on the committee. Professors Lisa Farley (Education) and Lyse Hébert (School of Translation, Glendon) contributed thoughtfully and eloquently to the work of APPRC, sharing their

insights and wise counsel in committee discussions. Both Lisa and Lyse were also very hard working members of the Joint APPRC-ASCP Sub-committee on Quality Assurance, which Lyse so ably chaired last year. We express our deep thanks and gratitude for their commitment to the work of Senate.

Brenda Spotton Visano
Chair of APPRC

Academic Standards, Curriculum and Pedagogy Committee

Report to Senate

At its meeting of 16 December 2021

For Action

a. Establishment of BASc degree in Digital Technologies, Markham Campus • Department of Electrical Engineering and Computer Science • Lassonde School of Engineering

ASCP recommends that,

> **Senate approve the establishment of BASc degree in Digital Technologies, Markham Campus, housed in the Department of Electrical Engineering and Computer Science in the Lassonde School of Engineering as set out as Appendix A, effective FW2023-2024.**

Rationale:

As set out in Appendix A, the proposed new degree program aims to address employer needs for career-ready graduates in the field of digital technology. The program consists of a core spine of courses and three streams of which students will choose one: software development, cybersecurity, and data science. The proposed program employs a work integrated learning (WIL) model which requires close collaboration between employers and the University to ensure learners (who are both students and full-time employees) achieve the program's learning outcomes. The program has been developed with extensive input from employers, and in consultation with the broader Department of Electrical Engineering and Computer Science (EECS). Deep engagement with industry partners during the design, and the collaboration envisaged in this proposal with partners as the program is offered, strengthen the relevance of the education provided but do not dilute the University's responsibility for setting and meeting degree and program level outcomes, employing and reflecting on innovative pedagogy, and assessing student learning.

Input from faculty in both EECS and the broader Lassonde School of Engineering (LSE) at large was received through usual collegial processes. Individual faculty with expertise in the areas of software development, cybersecurity, data science and

computer security, networks, databases, operating systems, user interface design, and artificial intelligence were also involved in the development.

This program has clear alignment with two key University priorities: 21st Century Learning: "continually reinvent our programs to address emerging issues and labour market needs that call for new pedagogical approaches and cross-disciplinary thinking"; and Working in Partnership: "As a university, we will model new and deeper forms of collaboration with industry, government, alumni, donors, and community partners across all of our campuses." A 21st Century Learning goal is to "offer a wider range of credentials and flexible delivery options, from in-person to virtual, to expand access to learning for diverse individuals at multiple stages of their lives and careers". The program is also aligned with the Lassonde School of Engineering's mission to create solutions to global problems. In addition, the program is aligned to three of the United Nations' 17 Sustainable Development Goals: Quality Education; Industry, Innovation, and Infrastructure; and Sustainable Cities and Communities.

The program has conceptualized a WIL model that intentionally integrates theory and practice. Many of the program learning outcomes are to be achieved through learning opportunities provided in the workplace while defined and assessed within the academic program. Students will be employed throughout the program spending approximately 80% of their time in the workplace, thereby creating a positive impact on graduate employability and work readiness. Integrating theory and practice poses opportunities to enhance student learning experiences by increasing engagement and motivation towards learning.

A decanal statement from the Faculty of Science confirms consultation on and support for the proposed programs. Statements from the anchor Dean and the Provost confirm the resources for the new program, and its alignment with academic plans and the areas of growth expressed in the Strategic Mandate Agreement. The proposal also includes several letters of support from industry partners.

Complete documentation is provided as ASCP Appendix A.

Approvals: Lassonde Faculty Council on 5 November 2021, and ASCP 1 December 2021.

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

b. Revision of the BFA degree program in Integrative Arts to BFA degree program in Creative Technologies, Markham Campus • Department of Computational Arts • School of Arts, Media, Performance and Design

ASCP recommends that,

> **Senate approve the Revision of the BFA degree program in Integrative Arts to BFA degree program in Creative Technologies, Markham Campus, housed in the Department of Computational Arts in the School of the Arts, Media, Performance and Design, set out as Appendix B, effective FW2023-2024.**

Rationale:

As outlined in Appendix B, the Specialized BFA in Creative Technologies is proposed as a major modification of the existing Integrative Arts program at Keele Campus as a new major for the Markham Campus. At Markham, Creative Technologies will centre on critical entrepreneurship by blending creative practice and theory with technological expertise and experiential learning in community contexts. While overlapping in program structure and spirit, Creative Technologies offers a range of courses available only in Markham, unlike the Integrative Arts which is open to a spectrum of in-person studio and studies courses offered by AMPD departments at Keele.

The Creative Technologies program will enable students to pursue courses in three broad pathways:

- **Engaging Research**: Research-Creation in Creative Technologies
- **Reshaping Industry:** Creative Technologies Industry Engagement
- **Building Community:** Participatory Creative Technologies

These pathways are not defined as separate streams, but rather as areas of emphasis from which students can opt to select courses. Crucially, students can move between these pathways as they pursue their degree. While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.

The program emphasizes collaboration, strategies for continuous learning, and effective communication across diverse settings as required for the future of work in the 21st century. Creative Technologies de-emphasizes the individual artist or creator as knowledge producer and energizes collaborative project development across all four years of study. In doing so, the program underscores the process of collaboration itself as the site of creative practice, while providing students with the foundational knowledge needed to navigate new and evolving fields, and to create new jobs for themselves and for others.

Creative Technologies overlaps with but is distinct from other AMPD programs. The Media Arts stream of the BFA Film in the Department of Cinema and Media Arts is keenly oriented to digital narration and storytelling, and several 1.0 credit options and other courses offered by this program will be integral to a Creative Technologies student's flexible pathways. Likewise, the Digital Media program in the Department of Computational Arts, in conjunction with Computer Science in the Lassonde School of Engineering, offers clear combinations of creative practice and digital technical skills. The Department of Design offers a BDes with specializations in visual communication, information design, and interaction design. Together, these differ from other undergraduate offerings from AMPD and the proposed Creative Technologies program, although areas of strength could serve a vital role in the new program's future curriculum.

The proposed Creative Technologies BFA's emphasis on combining creative practice with technological tools, collaborative experiences at all levels of study, decolonization and social justice aligns with York University's larger academic vision in Markham: to develop a campus "centred on technology and entrepreneurship". Moreover, Creative Technologies is committed to the priorities outlined in York's University 2020-2025 Academic Plan, emphasizing in particular that "digital inter-connectivity and physical mobility of people generate complexity but also immense possibilities to accelerate collaboration and problem solving" and that "technology is simultaneously enabling, enhancing, and disrupting every sphere of life and work, as well as revolutionizing how we all learn, think, and create". Creative Technologies is equally well-aligned with AMPD's 50+ Strategic Plan.

As with other programs at Markham, Creative Technologies will enable a student to

complete the entire program at the Markham Campus. The program will also be facilitated through a combination of online and blended learning models to enable sufficient numbers of courses to be offered to the first cohorts, and as its teaching complement grows.

The proposal includes letters of support from the AMPD Dean, the Dean of Libraries, and the Department of Communication and Media Studies in LA&PS.

Complete documentation is provided as ASCP Appendix B.

Approvals: School of the Arts, Media, Performance and Design Faculty Council on 10 November 2021, and ASCP 1 December 2021.

c. Establishment of a Disciplinary Certificate in Creative Writing Across Contexts • Glendon College

ASCP recommends that,

> **Senate approve the establishment of a Disciplinary Certificate in Creative Writing Across Contexts, housed within the Department of English at Glendon College, set out as Appendix C, effective FW2022-2023.**

Rationale:

The proposal for a Disciplinary Certificate in Creative Writing Across Contexts, set out as Appendix C, can be attained upon the successful completion, with a minimum cumulative B- average (70%) on the 4.0 GPA scale, and 24 credits of creative writing courses offered by Glendon's Department of English. The Certificate courses are open to all interested students; however, GL/EN 4800 is open only students who have completed prior Certificate courses with a minimum B- average.

The Certificate is composed of two 6-credit and four 3-credit courses. Students who have completed the 24 credits offered by the Department of English will have demonstrated proficiency in both the analysis and production of key literary genres and multimodal forms. The key learning expectations of the Certificate are to educate students about the practice of creative writing, through an intense program of learning fundamental and advanced writing skills in dialogue with a diversity of media,

platforms, cultures, and social issues. The Certificate is available to the following types of applicants: a) students currently registered at Glendon; b) students currently registered at York (concurrent entry); c) new applicants for the stand-alone certificate.

The key learning expectations of the CCWAC are to educate students about the practice of creative writing, through an intense program of learning fundamental and advanced writing skills in dialogue with a diversity of media, platforms, cultures, and social issues. The Certificate is built in concert with Glendon's reputation as a dynamic site for intersectional liberal arts education that emphasizes student-centred and community-focused learning experiences. The Certificate positions creative writing as a discipline that exceeds solitary creative action, framing it instead as a flexible practice that is inherently interdisciplinary, multimodal, and collaborative. It reflects Glendon's core values, as articulated in the 2020-2025 University Academic Plan, in that it "engages a diversity of cultures and lived experiences;" "offers transferable and marketable skills for career-readiness;" and prepares students to "tackle the demanding global and transnational challenges of our time," with an emphasis on digital literacy, environmental issues, and social inequalities.

The Certificate is also aligned with Glendon's mission to redefine the Liberal Arts in the 21st century, to cultivate a student-centered campus and community experience, and to promote cross-cultural dialogue, and comprises a range of courses that broaden student perspectives on creative writing by fostering practices that cross genres, cultures, and media. As such, it is intended to open pathways for students who wish to pursue careers in cultural fields, and to further enhance Glendon's commitment to an educational experience that broadens students' perspectives and abilities as writers, adopts different approaches to diverse creative practices, and trains students' minds to be agile and prepared for creative work. This credential will draw on Glendon's small size and intimate setting, fostering both a sense of community and the skills needed to succeed in creative environments with flexible methodologies, attention to cross-cultural exchanges, and digital competency.

The proposal includes letters of support from the LA&PS Department of English, the Dean of Libraries, the Glendon Digital Media Lab, and the Principal of Glendon College.

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

Approvals: Glendon College Faculty Council on 24 September 2021 and ASCP on 1 December 2021.

Complete documentation is provided as ASCP Appendix C.

d. Establishment of a Field in Health System Management and Health Data Analytics in the MA and PhD degree programs in Health • Faculty of Health

ASCP recommends that,

> **Senate approve the establishment of a Field in Health System Management and Health Data Analytics in the MA and PhD degree programs in Health in the Faculty of Health, set out as Appendix D, effective FW2022-2023.**

Rationale:

As set out in Appendix D, this proposal is a major modification for a new field in Health System Management and Health Data Analytics with the Graduate program in Health as the parent program. The new field brings together two areas of intellectual focus that correspond to specializations within the school: health management and health informatics. These two areas come together in a way that centers around the use of health data analytics to support health system management decision making.

The fields of Health Management and Health Informatics/Analytics are interdisciplinary in nature which is evident from the diverse backgrounds of the graduate program's faculty members. Faculty with expertise in healthcare organization and management or health informatics completed most of their theoretical training in root disciplines of organizational theory and computer science, respectively. By bringing organizational decision making and informatics together in the health sector context, the proposed field promises to offer an innovative, cross-cutting program that approaches the field in a comprehensive way by incorporating the analytical and also the social, political, economic and organizational aspects of decision making. The core faculty in the School of Health Policy & Management are unique in the training and expertise they possess.

The Graduate program in Health was originally designed to be a framework for multiple fields. The new field is the result of the growth of the faculty in the program and the

program itself and opens up opportunities for alignment with areas of expertise already on campus.

Students enrolled in the proposed new field will also have opportunities for intra-program learning with the Health Policy and Equity field. The intentional intersecting of the two fields by having students take the same foundational courses means students will think about the field of health system management and health data analytics, and will also be exposed to some of the most pressing health, and health policy and equity questions facing our health sector, such as what inequities affect access to health and health care services, or how do politics and policy-making set the conditions promote or hinder health equity. This exposure will enable students to raise cutting-edge questions and will lead to new thinking about how to design, collect, manage and analyse data to ensure that programs and services enable equitable access and better, more equitable, health outcomes. Students will be well-positioned to take these insights forward to help inform the design, collection, and interpretation of patient and management data in ways that examine equity considerations as we pursue improvement of health systems. As an example, those working at the intersection of the proposed new field in Health System Management and Health Data Analytics and the existing field of Health Policy & Equity will be ideally positioned to address timely research and practical questions pertaining to things such as the 'absence' of health data on racialized communities and other equity seeking groups in Canada.

A number of statements of support are included in the proposal, including from the School of Information Technology in LA&PS, the Health Industry Management Program at Schulich, the Mathematics and Statistics Department in Science, and the Dean of Health confirming resource support for the new field. The proposal also includes several letters of support from respective Health Organizations.

Complete documentation is provided as ASCP Appendix D.

Approvals: Faculty of Health Council on 17 June 2021, and ASCP 1 December 2021.

e. Revisions to requirements for the Diploma in German and European Studies • Department of Politics • Liberal Arts and Professional Studies

ASCP recommends that,

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

Senate approve revisions to requirements for the Diploma in German and European Studies, housed in the Department of Politics in the Faculty of Liberal Arts and Professional Studies set out as Appendix E, effective FW2022-2023.

Rationale:

As set out in Appendix E, this diploma program is housed in the Department of Politics and is awarded in conjunction with a regular graduate degree at York University. The changes are being proposed with a view to revitalize the diploma and making it more relevant and attractive to students. In addition, the proposed changes will make the diploma more accessible to master's students including Glendon's Master's of Public and International Affairs program, and master's students from a variety of departments in the Faculty of Liberal Arts and Professional Studies (LA&PS). Furthermore, the proposed changes will bring the requirements of the diploma more in line with other graduate diplomas at York.

The primary changes to the program include:

- name change of the graduate diploma in German and European Studies to the *Graduate Diploma in European Studies*
- minor changes to update the requirements of the diploma:
    - Added flexibility to the requirements to allow students from a wide range of disciplines to participate in a manner that is consistent with their program requirements;
    - Replacement of the Colloquium and Summer school requirements with ongoing lecture series and requirements to take existing courses in LA&PS.

The proposal includes letters of support from the Humanities, Political Science, and Public and International Affairs programs.

Complete documentation is provided as ASCP Appendix E.

Approvals: Faculty of Liberal Arts & Professional Studies Faculty Council on 16 October 2021, and ASCP 1 December 2021.

Academic Standards, Curriculum and Pedagogy Committee
Report to Senate

For Consent

f. Revisions to requirements for the Diploma in Intermediate Accounting and the Master of Accounting degree program, Schulich School of Business

ASCP recommends that,

> **Senate approve revisions to the requirements for the Diploma in Intermediate Accounting and the Master of Accounting degree program, Schulich School of Business, effective FW2022-2023.**

Rationale:

This is a proposal to offer Term 0 courses of the Master of Accounting and the Diploma in Intermediate Accounting program in Hyderabad, India as an additional location with admission requirements to accommodate students studying in the unique location. The Schulich Hyderabad campus is currently unused during the summer months and the proposed DIAc Term 0 program in Hyderabad allows for the use of these facilities over these summer months.

This proposal envisages offering Term 0 of the DIAc program in Hyderabad in the summer to graduates of three-year business and non-business programs from Indian universities assessed as being equivalent to four-year degrees by CPA Canada, and who meet the minimum 120 credit hour requirement of CPA Canada based on a course-by-course evaluation.

The existing admission standards for admission into the DIAc and MAcc programs require a four-year bachelor's degree. In contrast, most business, arts and science degrees in India are three-year degrees. These degrees are generally assessed as being equal to four-year degrees by CPA Canada. On completion of Term 0 in Hyderabad the students of this program will join other DIAc students of the existing DIAc/MAcc program from Term 1 onwards at the Keele campus in Toronto.

Approvals: Schulich School of Business Faculty Council on 1 October 2021, and ASCP 1 December 2021.

Academic Standards, Curriculum and Pedagogy Committee
Report to Senate

For Information

g. Regulation Changes

Faculty of Graduate Studies

Changes to Undergraduate Students Taking Graduate Courses Regulations

h. Minor Modifications to Curriculum

Faculty of Education

Minor changes to degree requirements for the BA program in Education Studies

School of the Arts, Media, Performance and Design

Minor Changes to the degree requirements for the Specialized Honours BFA program (Production)

Schulich School of Business

Minor changes to the degree requirements for the MMKG Master of Marketing program

Change of title for the Global Mining Management (GMM) specialization to *Global Metals and Minerals Management* (GMM)

Minor changes to the degree requirements for the Master of Business Analytics, MBAN program

i. Markham Campus Update

ASCP has scheduled half day-long workshops on 15 December 2021 and 17 January 2022 dedicated to the review of Markham Campus proposals. Two additional meetings will be tentatively scheduled in late January and early February 2022 and will be utilized if needed.

Martin Bunch, Chair

York University

New Program Proposal

of the
Bachelor of Applied Science (BASc) Honours
in

Digital Technologies

Submitted: November 29, 2021

Note: Appendix A: Undergraduate Calendar Copy and Appendix B: Mapping of Program Learning Outcomes are not included in the package but are available upon request.

1. Introduction

1.1 Provide a brief statement of the degree program(s) being proposed, including commentary on the appropriateness and consistency of the degree designation(s) and program name with current usage in the discipline or area of study.

The Bachelor of Applied Science (BASc) Honours in Digital Technologies program aims to address employer needs for career-ready graduates in the field of digital technology. The program consists of a core spine of courses and three streams of which students will choose one: software development, cybersecurity, and data science. The proposed program employs a work integrated learning (WIL) model which requires close collaboration between employers and the University to ensure learners (who are both students and full-time employees) achieve the program's learning outcomes. This is discussed in detail below.

The BASc degree designation provides a structure that lends itself to the flexibility required for a WIL program with respect to both admission requirements and the integration of experiential learning components. Because the Bachelor of Science (BSc) and Bachelor of Arts (BA) programs in similar fields (computer science and information technology) already exist at York University, expectations regarding admission requirements and distribution of courses across general education and electives for these degree types are firmly established. See section 2.3 for further details about the appropriateness of the degree nomenclature.

Digital Technologies is a new program name, not used to our knowledge for any bachelor's degree program offered elsewhere in Canada. The name distinguishes the program from computer science and from information technology programs of which there are many in Canada, while remaining closely associated with those domains. Digital Technologies is a broader umbrella, allowing for future diverse streams in addition to the three proposed here. As a new name it also serves as a differentiating factor based on the nature of the learning experiences in the program – namely the WIL component throughout the curriculum.

1.2 Provide a brief description of the method used of the development and preparation of the New Program Brief, including faculty and student input and involvement.

The program has been developed with extensive input from employers, and in consultation with the broader Department of Electrical Engineering and Computer Science (EECS). The first stage involved the development of an occupational standard (i.e., what employers expect entry level employees to know, be able to do and behave) through interviews and workshops with a group of 14 employers to whom we refer as trailblazers. In the second stage of development, the occupational standard was used to design program level outcomes and subsequently a curriculum consisting of scaffolded learning experiences to be achieved through curated in-class, online and workplace activities. Employers reviewed and advised during this second stage. It is important to note that the University, Faculty and Department remain responsible for the quality of the program, setting program learning outcomes, designing the curriculum, and assessing student learning achievement against those program and degree level outcomes. Deep engagement with industry partners during the design, and the collaboration envisaged in this proposal with partners as the program is offered, strengthen the relevance of the education we provide but do not dilute the University's responsibility for setting and meeting degree and program level outcomes, employing and reflecting on innovative pedagogy, and assessing student learning.

Input from faculty in both EECS and the broader Lassonde School of Engineering (LSE) at large has been received through usual collegial processes, including through our committees of Faculty Council. The EECS Department has discussed the program at departmental

meetings while it was under development, and then through the Curriculum Committee (which includes student representation), and finally Departmental approval process. Individual faculty with expertise in the areas of software development, cybersecurity, data science and computer security, networks, databases, operating systems, user interface design, and artificial intelligence were also involved in the development.

1.3 Indicate the Faculty/unit in which the program will be housed.

The program will be housed in the Department of Electrical Engineering and Computer Science in the Lassonde School of Engineering.

1.4 Indicate the location/campus of the new program.

The program will be offered at the Markham campus.

2. General Objectives of the Program

2.1 Provide a brief description of the general objectives of the program.

The general objectives of the program are to:

1. Prepare graduates with the ability to immediately contribute, through development of digital technologies, to business outcomes of the organization in which they are employed;
2. Prepare graduates with the ability to interact constructively with others at multiple levels within the organization in which they are employed;
3. Prepare graduates with an awareness of the ethical and social responsibilities that comes with their acquired deep expertise in the field of digital technologies; and
4. Prepare graduates for life-long learning in the field of digital technologies.

2.2 Describe how the general objectives of the program align with University and Faculty missions and academic plans.

This program has clear alignment with two key University priorities: 21st Century Learning (e.g., “continually reinvent our programs to address emerging issues and labour market needs that call for new pedagogical approaches and cross-disciplinary thinking”) and Working in Partnership (i.e., “As a university, we will model new and deeper forms of collaboration with industry, government, alumni, donors, and community partners across all of our campuses.”). A 21st Century Learning goal is to “offer a wider range of credentials and flexible delivery options, from in-person to virtual, to expand access to learning for diverse individuals at multiple stages of their lives and careers”. This program will broaden accessibility due to the nature of its delivery. Because students are employed with a partner organization, program delivery will be different than other traditional program deliveries (for example, students are expected to be on campus one day a week).

The program is also aligned with the Lassonde School of Engineering’s mission to create solutions to global problems. Specifically, the program is aligned to three of the United Nations’ 17 Sustainable Development Goals: Quality Education; Industry, Innovation, and Infrastructure; and Sustainable Cities and Communities. Moreover, Lassonde is focused on making an impact in infrastructure development and intelligent and interactive systems – both of which are possible by having students learn by doing in the field of digital technologies. Digital Technologies is the type of program that is responding to one of the core themes in the School’s 5-year Strategic Academic Plan set to launch this fall; namely to inspire our community to act and create new teaching methods and learning models. Programming at Lassonde will aim to attract students who would have otherwise been unable to pursue a degree, as well as be at the forefront of our approach to

build inclusive academic programs that are both supportive and welcoming for learners from a diverse array of backgrounds. In its new academic plan the School articulates its ambitions to launch “academic programs at the Markham campus that will be known nationally for leading the ICT sector’s development through quality WIL and strong employer partnerships."

The Digital Technologies program is invested in enhancing the plans and efforts over the coming year to ensure that it incorporates clear pathways and supports for marginalized communities and espouses a renewed equity, diversity, and inclusion (EDI) culture and community. We are currently exploring how to develop curriculum that is truly inclusive by seeking EDI curriculum advisors, such as embedding Indigenous ways of knowing into the curriculum. Research has demonstrated that the variety of learning styles offered by the experiential, workplace, and project-based curriculum that are integral to the Digital Technologies program strongly support the needs of diverse learners

While the details of such plans are not yet explicitly articulated in this proposal, there is an ongoing commitment to develop a high-level of EDI engagement with our community and employers from a recruitment perspective, along with a series of additional supports that will be implemented at the course and program levels for all our students, including students from underrepresented groups.

It is important to emphasize that this program is looking to create an environment of learning for each cohort of learners to build and foster a stronger culture for EDI practices across the program and the School. The details of precisely how this will be realized is a work in progress, which includes acquiring the right expertise and dedicated resources for training, and introducing the appropriate mechanisms to support course delivery and our colleagues in addressing our EDI goals.

2.3. Describe the appropriateness of the degree nomenclature. *Note: Degree types are approved by Senate and require two meetings for approval: an initial notice of motion and then the motion to establish the new degree type.*

The BASc in Digital Technologies program combines core foundational knowledge in computer science and mathematics with the reinforcement and reflection brought to bear through meaningful application in the workplace. The BASc degree nomenclature appropriately reflects this combination. As an Honours program it allows for the depth of domain expertise and research-based enquiry appropriate to meet degree expectations for critical analysis, awareness of limits of knowledge, and aptitude for life-long learning.

This new major recognizes the knowledge, skills and behaviours which are co-developed with employers that represent the Information and Communication Technology (ICT) sector as partners, and which involve extensive learning within the workplace as an integral part of the learning experiences. It is intended that students will be employed by an organization who will facilitate learning in the workplace in accordance with the standards and outcomes framework established for the program (see below). The specific major, Digital Technologies, responds to program needs at the new Markham campus and the expressed interests of the Markham community, especially the digital technologies sector, and is designed to align to the Ontario Council of Academic Vice-Presidents’ University Undergraduate Degree Level Expectations (UUDLES). The program will build skills in the breadth of areas of digital technologies (such as computer security, networks, databases, operating systems, software development, user interface design, techniques in artificial intelligence) as well as behaviours related primarily to the organizational context (such as curiosity to improve processes using creative approaches to

solutions, empathy and positive engagement to enable working and collaborating in multi-disciplinary teams, and pragmatism in the face of real-world scenarios).

3. Need and Demand

3.1 Identify similar programs offered at York and/or by other Ontario universities, with special attention paid to any innovative and distinguishing aspects of the proposed program.

In the Canadian landscape of postsecondary offerings, the BASc in Digital Technologies is unique in its delivery and design. The closest related programmatic offerings are in the field of Computer Science, Computer Security, and Information Technology. See Table 1, below, for a summary of related programs offered for study at Ontario universities.

Table 1: Credentials Awarded and Related Disciplines of Study at Ontario Universities

Institution	Credential	Discipline
Algoma University	• Bachelor of Arts • Bachelor of Computer Science • Bachelor of Science • Graduate Certificate	• Information Technology • Computer Science
Brock University	• Bachelor of Science	• Computer Science
Carleton University	• Bachelor of Arts • Bachelor of Commerce • Bachelor of Computer Science	• Communication and Information Technology Policy • Information Systems
	• Bachelor of Information Technology • Bachelor of Mathematics • Bachelor of Science	• Computer and Internet Security • Computer Science and Law • Computer Science and Psychology • Information Resource Management (IRM) • Interactive Multimedia and Design (IMD) • Network Technology (NET) • Optical Systems and Sensors (OSS) • Computer Science and Mathematics • Chemistry and Computer Science
University of Guelph	• Bachelor of Arts • Bachelor of Computing • Bachelor of Science	• Information Systems and Human Behaviour • Computer Science
Lakehead University	• Bachelor of Science	• Computer Science
Laurentian University of Sudbury	• Bachelor of Arts • Bachelor of Computer Science • Bachelor of Science	• Computer Science • Mathematics and Computer Science
McMaster University	• Bachelor of Applied Science • Bachelor of Arts • Bachelor of Engineering • Bachelor of Science • Certificate	• Business Informatics • Economics and Computer Science • Computer Science • Mathematics and Computer Science • Information Technology

Institution	Credential	Discipline
University of Ottawa	• Bachelor of Applied Science • Bachelor of Commerce • Bachelor of Science	• Computer Science • Management Information Systems • Computer Science and Mathematics
Queen's University	• Bachelor of Commerce • Bachelor of Science	• Information Systems • Computer Science
Ryerson University	• Bachelor of Commerce • BSc (Honours) • Certificate	• Information Technology Management • Computer Science • Information Systems Development • Information Systems Management • Information Technology Studies
University of Toronto	• Bachelor of Arts • Bachelor of Business Administration • Bachelor of Science	• Communication, Culture and Information Technology • Management and Information Technology • Computer Science • Information Systems • Management and Information Technology
Trent University	• Bachelor of Arts • Bachelor of Science	• Computer Science • Information Systems • Computer Science • Information Systems • Mathematical Computer Science
University of Waterloo	• Bachelor of Computer Science • Bachelor of Science • Graduate Certificate	• Computer Science • Information Systems Management • Information Systems Management and Chartered Accountancy • Mathematics and Information Technology Management
Western University	• Bachelor of Science	• Honours Specialization in Information Systems • Honours Specialization in Computer Science

Institution	Credential	Discipline
University of Windsor	• Bachelor of Commerce • Bachelor of Computer Science • Bachelor of Computer Science & Bachelor of Education • Bachelor of Mathematics • Bachelor of Science	• Business Administration and Computer Science • Computer Science • Networks and Security • Computer Science and Education • Mathematics and Computer Science • Applied Information and Technology • Computer Information Systems • Physics and Computer Science
York University	• Bachelor of Arts • Bachelor of Science • Bachelor of Business Administration • Bachelor of Commerce • Bachelor of Health Studies • Certificate	• Information Technology Communications • Information Technology Management • Information Technology Marketing • Information Technology • Information Technology and the Health Industry • Information Technology Management • Computer Science • Computer Security • Operations Management and Information Systems • Health Informatics • Information Technology Auditing and Assurance

The proposed program is distinctive from existing programs offered at York. In particular:

(1) The program has conceptualized a WIL model that intentionally integrates theory and practice. Many of the program learning outcomes are being achieved through learning opportunities provided in the workplace while defined and assessed within the academic program. Students will be employed throughout the program spending approximately 80% of their time in the workplace, thereby creating a positive impact on graduate employability and work readiness. Integrating theory and practice poses opportunities to enhance student learning experiences by increasing engagement and motivation towards learning. The model used in BASc in Digital Technologies significantly extends the co-op model common at many universities, and which, for example, is used institution-wide by the University of Waterloo in Ontario, and in Civil Engineering programs at Charles Sturt University in Australia[1]. The proposed program is close to the framework of degree apprenticeships in the United Kingdom (UK), specifically the framework used by Manchester Metropolitan University.[2]

(2) The proposed program takes advantage of the benefits of experiential learning in developing students' competencies in their selected occupations. The benefits include facilitating development of professional competencies and identity through engaging in

[1] https://study.csu.edu.au/courses/engineering/bachelor-technology-master-engineering-civil-systems
[2] https://www.mmu.ac.uk/study/apprenticeships/courses/digital-technology-solutions

practice, application of knowledge to practice, and reflection in the workplace environment[3][4]. WIL opportunities foster personal and professional growth and enrich students' higher education experience.[5][6]

(3) Collaboration with industry in design and delivery of the program will also give educators an opportunity to stay current with issues and practices in the IT industry.[7] The distinctiveness in the delivery of the proposed program supports the ability to enhance students' professional development and employability through the explicit integration of WIL.[8][9]

3.2 Provide brief description of the need and demand for the proposed program, focusing as appropriate on student interest, social need, potential employment opportunities for graduates, and/or needs expressed by professional associations, government agencies or policy bodies.

Demand for such a program is evident as high-profile employers are partnering with York University to seek innovative solutions to help them attract and develop talent that is currently in significant shortage. Partner organisations are crucial for the success of this program, and we have partnered with employers to help co-create the Program Learning Outcomes (PLOs). These trailblazer partners, who provide a wide representation of sectors and sizes, include, Ceridian, CGI, Cincy, Cisco, Connect.Io, EY, GM, IBM, Mimik Technology Inc., RBC, Saa Dene, Shopify, Telus Health, Treasury Board Secretariat Canada and Tribal Scale. We have also partnered with employer associations supporting the IT sector: Chief Information Officer (CIO) Strategy Council, TECHNATION. The CIO Strategy Council and TECHNATION will provide support for broader consultation with the IT sector to ensure that the program will have future exposure to a significant number of employers. We have also partnered with Co-operative Education and Work-Integrated Learning Canada (CEWIL)[10] to provide a national standard for this type of WIL.

Through collaboration and partnerships, long term relationships with industry partners are being established. Co-designing and collaborating in the implementation of the curriculum means that the program will be in tune with the current demands of the industry. The employers get an opportunity to contribute in several ways to early development of the workforce, some of which may be their future employees. Furthermore, these companies foster a pipeline of prospective employees, while students get the benefit of integrating their learning into practice.

According to the Higher Education Quality Council of Ontario (HECQO), it was found that student demand for WIL opportunities is increasing in Ontario.[11] A review of existing research around the reasons students seek and participate in WIL programs by McRae et al[12] has found that students believe that the programs will help them (1) to determine if they are fit for career

[3] Patrick, Carol-joy, Deborah Peach, Catherine Pocknee, Fleur Webb, Marty Fletcher, and Gabriella Pretto. The Wil (Work Integrated Learning) Report: A National Scoping Study. Queensland University of Technology, 2008.
[4] Stirling, Ashley, Gretchen Kerr, Jeness Banwell, E MacPherson, and Amanda Heron. A Practical Guide for Work-Integrated Learning: Effective Practices to Enhance the Educational Quality of Structured Work Experiences Offered through Colleges and Universities. Ontario, Toronto: Higher Education Quality Council of Ontario Toronto, 2016
[5] Stirling et al., 2016.
[6] McRae, N, J Pretti, and D Church. "Work-Integrated Learning Quality Framework, AAA." (2018). https://uwaterloo.ca/centre-advancement- co-operative-education/research-publications/wil-quality-framework.
[7] McRae et al., 2018.
[8] Jackson, Denise. "The Contribution of Work-Integrated Learning to Undergraduate Employability Skill Outcomes." Asia-Pacific Journal of Cooperative Education 14, no. 2 (2013): 99-115
[9] 9 Rowe, Anna D, and Karsten E Zegwaard. "Developing Graduate Employability Skills and Attributes: Curriculum Enhancement through Work-Integrated Learning." Asia-pacific journal of cooperative education 18 no. 2 (2017)
[10] https://cewilcanada.ca/
[11] Malatest, R. A., and Associates Ltd. "Barriers to Work-Integrated Learning Opportunities." 75. Toronto, ON, CA: Higher Education Quality Council of Ontario, 2018.
[12] McRae et al., 2018.

to enhance their career goals (3) to develop skills, attribute and knowledge that is relevant to the workplace context (4) to enhance their resumes, (5) to apply theory to practice and (6) to develop a network of job search contacts.

On graduation students need to demonstrate that they have competencies that will allow them to enter and succeed in the world of work. The Digital Technologies program has potential to meet the existing demand for graduates with employability and globalization skills required in the workplace. The programs wide and explicit application of WIL means that it has a great potential to improve graduate employability.[13][14] In addition to improving employability, WIL has been supported for its potential to meet requirement for lifelong learning and other profession specific competencies that cannot be easily gained in traditional teaching.[15]

The proposed program is beneficial because it meets the existing need for postsecondary institutions to provide high quality learning experiences to retain student engagement and motivation. The potential to develop practical technical skills through learning by doing is also high in the workplace.[16] Programs like this where students are paid employees in organisations while acquiring their degree are known to be able to attract students from different social and economic backgrounds and status, a good example being the degree apprenticeships in the UK.[17] These programs have high retention rates.

This is a program that suits diverse types of learners, a priority identified in the University's Academic Plan 2020-2025[18] on diversity, which focuses on providing more access and opportunities to diverse student bodies in Canada and internationally. The proposed BASc in Digital Technologies aligns with this plan because it aims to cater for these groups. The program's admission system is designed to provide a flexibility that will allow for diverse types of learners to participate. Further, it is well established in the literature on WIL that a delivery method through experiential learning suit for instance, mature age, female, Indigenous and non- traditional student groups, provided that it is done with proper planning, preparations and collaboration with industry.[19]

Prepared by Innovation, Science and Economic Development Canada, “Canada’s Digital Charter in Action: A Plan by Canadians, for Canadians” describes how we are at a time where we need to build a digital legacy and emphasized the importance of the digital economy. In Figure 1, below, digital technology is an explicit part of the plan to support a digital economy and includes work-integrated learning as one of the strategies to support skill development in this space.

With national commitments to support a digital and data-driven economy, there are new and emerging career opportunities in the broader discipline of Computer Science. We imagine there will be a continued demand from students for specialized training opportunities and real workplace experience as is planned in the development of this program.

We have made the decision to launch this program in Markham to also test the benefits of delivering the program partially at a campus, rather than being fully on-line. A vast body of research evidence over the past forty years has reinforced the benefits of agglomerations of new industrial spaces – or clusters of economic activity – that is, the high concentration of

[13] Jackson, 2013.
[14] Smith, C., S. Ferns, L. Russell, and P. Cretchley. "The Impact of Work Integrated Learning on Student Work-Readiness." Sydney, NSW: Office for Learning and Teaching, Australian Government Department of Education, 2014.
[15] McRae et al., 2018.
[16] Rowe and Zegwaard, 2017.
[17] Smith, Sally, Ella Taylor-Smith, Khristin Fabian, Mark Zarb, James Paterson, Matthew Barr, and Tessa Berg. "A Multi-Institutional Exploration of the Social Mobility Potential of Degree Apprenticeships." Journal of education and work 34, no. 4 (2021): 488-503
[18] https://www.yorku.ca/uap2020-25/building-a-better-future/
[19] Malatest and Associates Ltd., 2018.

businesses and research environments in close proximity to one another (Camagni, 1991; Florida, 2002; Gertler, 2003; Gertler and Levitte, 2005; Lee and Florida, 2004; Porter, 1998; Santini and Belandi, 2017; Scott, 2008). The most famous of the technology spaces in North America are Silicon Valley in California and Route 128 around Boston, while in Canada there are smaller agglomerations such as Ottawa-Kanata ('Silicon Valley North'), Waterloo, and the growing area in which York University is situated. Close proximity of businesses, entrepreneurs and research facilities supports greater and deeper collaborations among different organizations as well as the rise of strategic alliances. Simply put, people exchange ideas and learn new ways of doing things, all of which heightens the capacity for product and processes innovations. Inter-personal relationships are developed, informal and formal networks established, and the proximity of businesses, researchers and learners propels business opportunities and advances new knowledge.

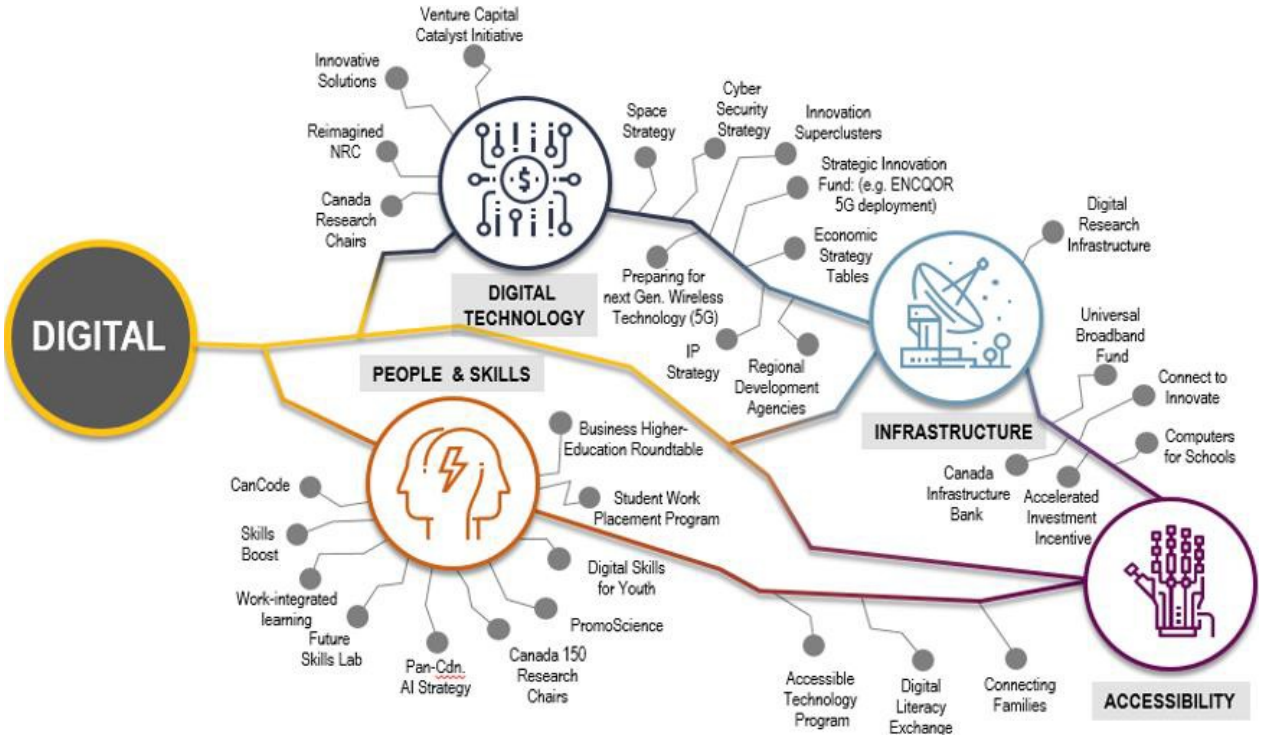


Figure 1 Innovation and Skills Plan. Government of Canada (2019).

With this program, we can continue to contribute, strengthen and expand our research and learning enterprise with current industry partners that already have close relationships with Lassonde and York University, which we've cultivated over many years through various collaborations. Not only through the presence of the undergraduate programs, but the next phase academic offerings of a Master's program in this area to complement existing suite of scholarly activities in Markham. Lassonde's new BASc in Digital Technologies program will take our industry-research connections with the School's graduate and undergraduate Computer Science programs, researchers, and faculty to the next level. The proponents of this program have begun work with the Trailblazers to specify PLOs for a Master's in Digital Technologies, specifically for employees wishing to further specialize in their field. It is envisaged that this new program will be offered at the Markham campus once the BASc in Digital Technologies has been launched and is successfully running.

Furthermore, students from this program will have access to continue their studies in the region and participate in graduate degrees not just from Lassonde, but new graduate diplomas

and degrees in areas relating to management practice and public policy being offered by other Faculties at the Markham campus. As graduates of a 120-credit honours degree program they will also be eligible to apply for graduate programs in other universities, both domestically and internationally. The job market in the Information Technology (IT) fields is projected to continue to show strong growth out to 2028. Examples of potential employment opportunities for graduates of this program include: Computer Systems Analyst, Data Analyst – Informatics and Systems, Information Security Analyst, Software Developer, Software Programmer, Front End Software Developer, Back-End Software Developer, Software Engineer – Fullstack, Software QA Analyst, Cyber Security Analyst, Information Security Analyst, System Security Analyst, Security Architect, Data Scientist, Machine Learning Data Scientist, and Data Science Lead.

Drawing from the Canadian Occupational Projection System (COPS), the following observations are projections for the period of 2019 to 2028 for NOC codes 2171, 2172, 2173, and 2174.[20]

Information Systems Analysts and Consultants (NOC 2171)

- This occupational group is expected to face labour shortage conditions over the period of 2019-2028 at the national level.
- Over the period 2019-2028, the number of job openings (arising from expansion demand and replacement demand) for Information systems analysts and consultants are expected to total 113,000, while the number of job seekers (arising from school leavers, immigration and mobility) is expected to total 98,700.
- The labour shortage conditions seen in recent years are expected to persist into the 2019-2028 period and could even become more acute as the projected number of job openings is expected to be substantially larger than the projected number of job seekers over that period.
- Retirements and job growth are expected to account almost equally for the majority of job openings.
- Employment growth is projected to be one of the strongest among all occupations. As a result, job creation will represent 47% of all openings, a proportion that is above the average of all occupations (about 27% of openings).
- Most of these workers are employed in the industries of computer systems design and related services; as well as in finance, insurance, real estate and leasing services; and telecommunications, information and culture services.
- Demand for workers in this occupation is expected to be supported by technological changes.
- With regard to labour supply, school leavers are expected to be the main source of labour in this occupational group, representing about half of job seekers.
- Despite the inflow of workers, the shortage conditions seen in recent years are not expected to disappear over the projection period.

Database Analysts and Data Administrators (NOC 2172)

- This occupational group is expected to face labour shortage conditions over the period of 2019-2028 at the national level.
- Over the period 2019-2028, the number of job openings (arising from expansion demand and replacement demand) for Database analysts and data administrators are expected to total 18,000, while the number of job seekers (arising from school leavers, immigration and mobility) is expected to total 16,700.

[20] https://open.canada.ca/data/en/dataset/e80851b8-de68-43bd-a85c-c72e1b3a3890

- The labour shortage conditions seen in recent years are expected to continue over the projection period.
- Retirements and job growth are expected to account for the majority of job openings.
- Employment growth is projected to be one of the strongest among all occupations. As a result, job creation will represent about half of all openings, a proportion that is above the average of all occupations (about 27% of openings).
- Most of these workers are employed in service industries such as computer systems design and related services; finance, insurance, real estate and leasing services; telecommunications, information and culture services; and public administration.
- Demand for workers in this occupation is expected to be supported by technological changes.
- With regard to labour supply, school leavers are expected to be the main source of labour in this occupational group, representing about three quarters of the job seekers.
- Despite the inflow of workers, the shortage conditions seen in recent years are not expected to disappear over the projection period.

Software Engineers and Designers (NOC 2173)

- This occupational group is expected to face labour shortage conditions over the period of 2019-2028 at the national level.
- Over the period 2019-2028, the number of job openings (arising from expansion demand and replacement demand) for Software engineers and designers are expected to total 27,500, while the number of job seekers (arising from school leavers, immigration and mobility) is expected to total 24,000.
- The labour shortage conditions seen in recent years are expected to persist into the 2019-2028 period, and could even become more acute as the projected number of job openings is expected to be substantially larger than the projected number of job seekers over that period.
- Retirements and job growth are expected to account for the majority of job openings.
- Employment is projected to grow at a significantly higher rate than the average of all occupations. As a result, job creation will represent more than half of all openings, a proportion that is above the average of all occupations (about 27% of openings).
- Most of these workers are employed in the industries of computer systems design and related services, as well as in telecommunications, information and culture services.
- Computer systems design will continue outperforming most industries in terms of production and employment growth, as demand is expected to be supported by technological changes.
- With regard to labour supply, the number of computer science school leavers is projected to continue to be high since this field of study remains attractive to young people.
- A significant number of workers are expected to leave this occupation for other occupations, in particular to seek jobs in information and technology related occupations such as information systems analysts and consultants (NOC 2171). As a result, the shortage conditions observed in recent years are expected to become more acute over the projection period.

Computer Programmers and Interactive Media Developers (NOC 2174)

- This occupational group is expected to face labour shortage conditions over the period of 2019-2028 at the national level.
- Over the period 2019-2028, the number of job openings (arising from expansion demand and replacement demand) for Computer programmers and interactive media developers

are expected to total 64,200, while the number of job seekers (arising from school leavers, immigration and mobility) is expected to total 75,800.

- The labour shortage conditions seen in recent years are expected to continue over the projection period.
- Retirements and job growth are expected to account for the majority of job openings.
- Employment is projected to grow at a rate higher than the national average. As a result, job creation will represent half of all openings, a proportion that is above the average of all occupations (about 27% of openings).
- Most of these workers are employed in the industries of computer systems design and related services; finance, insurance, real estate and leasing services; and telecommunications, information and culture services industries.
- Demand for workers in this occupation is expected to be supported by technological changes.
- With regard to labour supply, the number of school leavers in computer science is projected to continue to be high since this field of study remains attractive to young people.
- A significant number of workers are expected to leave this occupation for other related occupations, in particular to seek jobs in information and technology related occupations such as software engineers and designers (2173) and user support technicians (NOC 2282). As a result, the shortage conditions observed in recent years is not expected to disappear over the projection period.

According to the Canadian ICT Sector Profile 2020, there is continued evidence of growth in employment in 2020 despite the pandemic[21]:

- Canada's ICT sector posted strong growth in 2020 despite the impacts of the pandemic, especially in ICT services, and outperformed the overall Canadian economy in terms of output, employment, and innovation growth.
- ICT sector is well positioned to benefit from the economy-wide recovery as demand is expected to reflect accelerating adoption of many technology solutions and private and public investments in digital infrastructure.
- Each direct job in the ICT sector supports an additional 1.3 jobs within the Canadian economy and each $1 million of direct GDP generated within the ICT sector leads to an additional $832,000 in GDP generated for Canada. Within the ICT sector, software and computer services generates the highest impact multiplier in terms of GDP, whereas communications services has the highest impact multiplier in terms of employment (1.9 multiplier).
- Employment growth in the ICT sector has been outpacing the overall economy for many years, between 2015 and 2020 average annual growth for ICT was 2.7%.
- In 2020, more than 671,109 individuals were working in the ICT sector, accounting for more than 3.7% of the Canada's total employment.
- Between 2015 and 2020, total employment growth in software and computer services has outpaced overall growth in the ICT sector (4.9% vs. 2.7%). Total ICT workforce grew 14.3% from 587,000 in 2015 to just over 671,000 in 2020. Software and computer services' share of employment has increased from 62.2% to 69% over that same time period, reflecting the rising proportion of service firms in the ICT sector compared to other sub-sectors

The software and computer services sub-sector employs the largest proportion of university educated workers within the ICT sector (62.2%).

4. Program Curriculum

4.1 Describe the program requirements and the ways in which the curriculum addresses the current state of the discipline or area of study. Identify any unique curriculum or program innovations or creative components.

The program requirements are built to satisfy both a set of core outcomes expected of all graduates irrespective of stream, and the outcomes of one of three stream: software development, cyber security and data science. The outcomes in the core provide a foundation spanning the (diverse) digital technology domain, including contextual knowledge of the business objectives and processes of an organization, while the streams add depth in one particular area.

The requirements consist of core learning units broadly grouped to address outcomes including knowledge, skills, and behaviours, in:

- Understanding organizations and the development of technology solutions aligned with organisational objectives;
- The creation of software solutions using industry standard methodologies and best practices;
- The development of digital technology infrastructure;
- Security and data privacy principles, methodologies, and processes;
- Data and information management and analytics; and
- Personal autonomous and professional practices, including communication skills, interpersonal behaviours relevant to working in teams, negotiation and conflict resolution, initiative, and life-long learning.

Cyber security and data privacy are key concerns for digital technologies, and widely recognized as challenges for both organisations and society. Similarly, data science, including the use of machine learning techniques, is a strategic activity for many organisations and increasingly the means of deriving value from data, but also a field that gives rise to societal concerns. The program core is unique in combining these topics with core software engineering skills and knowledge, all strongly aligned with organizational goals and an awareness of the ethical and social issues arising from them.

Of equal importance, the program explicitly builds personal and behavioural skills, along with knowledge of organizational structures, mission and objectives, in the context of digital technologies. Such abilities and knowledge are viewed as key to career success. A digital technology professional educated through this program will have developed initiative and passion for technology solutions, and a dedication to life-long learning, side by side with knowledge of the broader organizational context, and the ability to communicate with and work effectively in a diverse team environment. Communicating effectively with diverse audiences, as well as with technology peers, is an important marker of future success.

The key innovation in this program is the achievement of much of the program learning outcomes through extensive work integrated learning. As outlined in section 3.2 we have co-developed with digital technology professionals an occupational standard specifying the knowledge, skills, and behaviours expected of university educated new employees. That occupational standard has been the foundation for the program learning outcomes (described in section 5.1a). The achievement of these learning outcomes, scaffolded throughout the four years of the program, is also fully integrated with employer collaboration. Students will be full time employees for all of the four years of the program. In addition to the normal team of co-workers, they will have a learning mentor in the workplace who, in collaboration with faculty

members and with personal tutors in the Lassonde School of Engineering, will help ensure the student engages in meaningful workplace activities directed towards achieving academic outcomes, and produces suitable documentation through which such learning can be assessed (see section 5.1c for examples). The detailed curriculum defines the year-by-year learning outcomes and employers, aware of these outcomes, will have committed to providing suitable learning opportunities for students. Such opportunities will vary by workplace, but this variability will be of a similar nature as, for example, projects in a course vary from year to year as instructors of a course change.

The collaboration of employers in achieving specified learning outcomes throughout the program necessitates innovative course delivery models. It is impractical to expect a workplace, in which activities flow according to business objectives, to also be able to deliver learning opportunities within a normal semester length course. Consequently, courses that have learning objectives achieved through the workplace are full year calendar length and consist of threads of activities in different areas of learning that expose the interplay between theory (delivered in an academic component) and practice (as delivered through the workplace). This is further detailed in section 5 and its subsections. It should be noted that the teaching of such a course consists of delivering a theory component, with appropriate assessments, along with the monitoring and assessment of workplace learning, usually documented through an e-portfolio, over a multi-semester length. The theory component might be front loaded during the first few weeks or interspersed and coordinated with workplace learning to maximise the interplay between theory and practice, as appropriate.

Finally, it should also be noted that this model for delivering the curriculum also requires substantial support of the learner through personal tutors who will assist (keep on track) the student in meeting and documenting learning outcomes as well as liaising with faculty members. This model is discussed in detail in section 7.

4.2 Provide a list of courses that will be offered in support of the program.

The list of courses must indicate the unit responsible for offering the course (including cross-lists and integrations, as appropriate), the course number, the credit value, the short course description, and whether or not it is an existing or new course. For existing courses, the frequency of offering should be noted. For new courses, full course proposals are required and should be included in the proposal as an appendix. (The list of courses may be organized to reflect the manner in which the courses count towards the program requirements, as appropriate; e.g. required versus optional; required from a list of specified courses; specific to certain concentrations, streams or fields within the program, etc.)

All courses are new in as much as they will be offered at the new Markham campus. Many are based on existing courses offered by the Department of Electrical Engineering and Computer Science at the Keele campus, but the frequency of offering of such courses at the Keele campus is not relevant.

The learner experience was considered in terms of workload (assignment design, use of work- based assessment and attendance pattern at the university). Note that the first four months of the program are academic learning with full-time attendance at the university, with outcomes providing base-level skills necessary before the student starts in the workplace. The student will be an employee from the start of the program and will spend the vast majority of their program in the workplace.

The pattern of delivery of the academic learning, where it is expected that the student attends the Markham campus, is yet to be determined in consultation with local employers. It may be

one day a week during each semester. Alternatively, delivery maybe more blended where the student is allowed a weekly 0.5 day release from work to allow for self-study using a synchronous virtual platform (online webinar lecture, online tutorials) interspersed with regular (e.g., every 6 weeks) 3 day blocks to attend campus.

Table 2 shows the courses required in the program and the duration and sequencing of the courses. The sequencing implies the prerequisite structure, which is not currently explicitly specified in the short course descriptions (see Appendix C). These short course descriptions are preliminary in the sense we expect them to be refined as new faculty employed for the Markham campus contribute to the program development. The duration is colour-coded and labelled with the months of the program (total number of months being 48) during which the academic/theory component of the course is taken. Many of the courses do not end with the completion of the academic/theory component; instead, an additional period is available during which the student may complete assignment/project-based deliverables through workplace activities. The table also shows the distribution of academic credits by semester for each year of the program. Section 5.1b provides details of the scaffolding of learning outcomes through this sequence of courses.

Table 2: Courses and Sequencing

	Colour Code	**Theory**			
		Theory + Workplace			
		Workplace			
	Course Code	**Title**	**Semester**		
			F	**W**	**S**
Year 1	LE/DIGT 1120 4.0	Introduction to Computational Thinking	1-4		
	SC/MATH 1150 3.0	General Mathematics for Software Development	1-4		
	LE/DIGT1110 2.0	Teamwork and Communication	1-4		
	XX/XXXX yyyy 3.0	Organisations: Structure and Processes	1-4		
	LE/DIGT1210 1.0	Workplace Reflection I		5-12	
	XX/XXXX yyyy 3.0	Being a Digital Citizen	1-4		
	XX/XXXX yyyy 3.0	Animating a Digital Citizenry		5-8	
	LE/DIGT 1220 8.0	Object Oriented Problem Solving		5-12	
	LE/DIGT 1320 3.0	Net-centric Computing			9-16
	Yr. 1 Credits: 30				
Year 2	LE/DIGT 2120 4.0	Systems Programming (4 1 cr components)	13-24		
	LE/DIGT 2130 8.0	Data Structures, Algorithms and Analysis	13-20		
	LE/DIGT 2121 3.0	Practice of Software Development	13-20		
	LE/DIGT 2210 3.0	Operating Systems		17-20	
	LE/DIGT 2230 3.0	Communications and Network Fundamentals		17-20	
	LE/DIGT 2330 3.0	Security Fundamentals			21-24
	LE/DIGT 2340 3.0	Introduction to Data Management			21-24
	LE/DIGT 2110 1.0	Workplace Reflection II	13-24		
	XX/XXXX yyyy 2.0	Elective credits			
	Yr. 2 Credits: 30				
Year 3	LE/DIGT 3120 3.0	Software Development Lifecycle	25-28		
	LE/DIGT 3230 3.0	Software Security		29-32	
	LE/DIGT 3130 3.0	Security and Privacy: Awareness and Governance	25-28		
	LE/DIGT 3140 3.0	Introduction to Data Analytics	25-32		

	XX/XXXX yyyy 3.0	Introduction to Project Management			33-36
	LE/DIGT 3100 9.0	Digital Technologies Project		25-36	
	either				
	LE/DIGT 3121 3.0	TBD - Software I	25-28		
	LE/DIGT 3220 3.0	TBD - Software II		29-32	
	or				
	LE/DIGT 3131 3.0	Network Security	25-28		
	LE/DIGT 3231 3.0	Basics of Cryptography		29-32	
	or				
	LE/DIGT 3141 3.0	Database Systems	25-28		
	LE/DIGT 3240 3.0	Data Acquisition and Governance		29-32	
	Yr. 3 Credits: 30				
Year 4	LE/DIGT 4110 3.0	Machine Learning: Foundations	37-40		
	LE/DIGT 4112 3.0	Machine Learning: Applications		37-44	
	LE/DIGT 4210 3.0	Cloud computing: infrastructure and software		41-44	
	LE/DIGT 4113 3.0	User Driven Development		37-44	
	Either				
	LE/DIGT 4121 3.0	Software Development I	37-40		
	LE/DIGT 4220 3.0	Software Development III		41-44	
	LE/DIGT 4122 3.0	Software Development II		37-44	
	LE/DIGT 4120 9.0	Software Development Synoptic Project		37-48	
	Or				
	LE/DIGT 4131 3.0	System Security: Architecture and Engineering	37-40		
	LE/DIGT 4230 3.0	System Security: Trust, Identity and Access		41-44	
	LE/DIGT 4132 3.0	System Security: Detection, Response, Recovery		37-44	
	LE/DIGT 4130 9.0	Security Synoptic Project		37-48	
	Or				
	LE/DIGT 4141 3.0	Data Storage and Retrieval	37-40		
	LE/DIGT 4240 3.0	Data Mining		41-44	
	LE/DIGT 4142 3.0	Data Analysis and Presentation		37-44	
	LE/DIGT 4140 9.0	Data Science Synoptic Project		37-48	
	Yr. 4 Credits: 30				

Note that the program includes the following components of non-major, and general education credits:

SC/MATH 1150 3.0	Mathematics	General Mathematics for Software Development
XX/XXXX yyyy 3.0	General Education	Organisations: Structure and Processes
XX/XXXX yyyy 3.0	General Education	Being a Digital Citizen
XX/XXXX yyyy 3.0	General Education	Animating a Digital Citizenry
LE/DIGT 1220 8.0	2 credits Math	Object Oriented Problem Solving
LE/DIGT 2120 8.0	2 credits Math	Data Structures, Algorithms and Analysis
XX/XXXX yyyy 3.0	General Education	Introduction to Project Management

The program also includes explicit learning outcomes related to professional and personal development, that are implemented either through separate courses or integrated into project and other workplace learning. The holistic nature of the learning outcomes supplants the whole-person development normally implemented through elective courses.

4.3 Comment on the anticipated class sizes.

The planned annual admission is 100 students. Therefore, all class sizes for core courses will be no more than this number. Courses in the streams will be smaller, of course (e.g., year 1 & 2 course size = 100, while years 3 & 4 courses may be 30-45). Experience with similar programs in other countries (primarily the UK) suggests that attrition will be very low, and hence we do not expect the cohort size in upper years to be substantially less than the first-year admission.

4.5 As an appendix, provide a copy of the program requirements as they will appear in the Undergraduate or Graduate Academic Calendar.

The Undergraduate Academic Calendar copy of the BASc in Digital Technologies program can be found in **Appendix A.**

5. Program Structure, Learning Outcomes and Assessment

The intent of this section is to provide reviewers with an understanding of the knowledge, methodologies, and skills students will have acquired by the time they complete the program (i.e. the program learning outcomes), including the appropriateness of the program learning outcomes and how they will be supported and demonstrated. With that in mind, and with explicit reference to the relevant degree level expectations, it would be useful to focus on what students in the program will know and/or be able to do by the end of a defined period of time and how that knowledge, methodology and/or skill will be supported and demonstrated.

5.1 Program Learning Outcomes and Assessment

a) Provide the program learning outcomes along with a description of how these are appropriate and align with the relevant degree level expectations. Programs should have eight to twelve program learning outcomes.

Table 3 shows the program learning outcomes along with a mapping to undergraduate degree level expectations. Table 4 shows the undergraduate degree expectations along with the UUDLE codes referred to in Table 3.

The program learning outcomes derive from consultations with employers that resulted in the specification of an occupational standard that articulated the expected knowledge, skills and behaviours expected from a graduate of this program. Hence, as far as a career ready education is concerned the program learning outcomes are entirely appropriate.

In addition, as can be seen from themapping to undergraduate degree level expectations, the program learning outcomes also provide the depth and breadth of knowledge, along with analytical and critical thinking skills, appropriate to the degree level. Awareness of limits of knowledge, and the ability to purposefully search out knowledge in pursuit of continued learning and application to problem solving, are explicit in the outcomes.

Table 3: Program Learning Outcomes (PLOs)

PLO1	Critically analyse, compare, and propose potential digital technology solutions to meet business needs
	Maps to UUDLEs: DB2-4, DB6, DB7, KofM1-3, AofK1-3, AofK5-9, CS1, AofL1, A&PC3, A&PC4
PLO2	Design, build and maintain fit for purpose, robust, secure digital systems
	Maps to UUDLEs: DB1-4, DB6, DB7, KofM1, KofM2, AofK1-9
PLO3	Analyse and prioritise security risks to digital systems and operational procedures using established frameworks and principles, and propose resolutions recognising the legal and ethical context
	Maps to UUDLEs: DB1-6, KofM1-3, AofK1-3, 5-9, AofL1

PLO4	Model, assess, implement, and maintain data management solutions appropriate for extracting meaningful and actionable insights that address organizational requirements.
	Maps to UUDLEs: DB1-6, KofM1-3, AofK1-3, 5-9, AofL1
PLO5	Demonstrate personal and interpersonal competencies in order to engage effectively at all levels within an organisation
	Maps to UUDLEs: CS1, A&PC1, A&PC2, A&PC3
PLO6	Clearly communicate, both orally and in writing, complex ideas to a variety of audiences using a range of appropriate strategies and media
	Maps to UUDLEs: CS1
PLO7	Demonstrate professionalism, social responsibility, and a reflective, self-managed approach to the development of new skills and knowledge
	Maps to UUDLEs: A&PC1, A&PC4, A&PC5
PLO8	Apply critical analysis and logical reasoning, including mathematical foundations, algorithmic principles, and computer science theory, to the theoretical, conceptual and practical issues central to developing digital solutions
	Maps to UUDLEs: AofK1-9, AofL1
PLO9	Demonstrate problem-solving and modelling skills appropriate to developing digital solutions by selecting and using well-defined engineering processes that iteratively integrate requirements, design, construction, validation, and other phases of development
	Maps to UUDLEs: KofM1-3, AofK1-9

Table 4: University Undergraduate Degree Level Expectations (UDLEs) Codes

Depth and Breadth of Knowledge	
DB1	Developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches and assumptions in a discipline overall, as well as in a specialized area of a discipline
DB2	Developed understanding of the major fields in a discipline, including where appropriate from an interdisciplinary perspective, and how fields may intersect with fields in related disciplines
DB3	Developed ability to: i) gather, review, evaluate and interpret information relevant to one or more of the major fields in a discipline
DB4	Developed ability to: ii) compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in a discipline
DB5	Developed, detailed knowledge of and experience in research in an area of the discipline
DB6	Developed critical thinking and analytical skills inside and outside the discipline
DB7	Ability to apply learning from one or more areas outside the discipline
Knowledge of Methodologies	
An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to:	
KofM1	Evaluate the appropriateness of different approaches to problem solving using well established ideas and techniques;
KofM2	Devise and sustain arguments or solve problems using these methods; and
KofM3	Describe and comment upon particular aspects of current research or equivalent advanced scholarship
Application of Knowledge	

I. The ability to review, present, and critically evaluate quantitative and qualitative information to:	
AofK1	Develop lines of argument;
AofK2	Make sound judgements in accordance with major theories, concepts and methods of the subject(s) of study;
AofK3	Apply underlying concepts, principles, and techniques of analysis both within and outside the discipline;
AofK4	Where appropriate use this knowledge in the creative process;
II. And the ability to use a range of established techniques to:	
AofK5	Initiate and undertake critical evaluation of arguments, assumptions, abstract concepts and information;
AofK6	Propose solutions;
AofK7	Frame appropriate questions for the purpose of solving a problem;
AofK8	Solve a problem or create a new work; and
AofK9	To make critical use of scholarly reviews and primary sources.
Communication Skills	
CS1	The ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing to a range of audiences
Awareness of Limits of Knowledge	
AofL1	An understanding of the limits to their own knowledge and ability, and an appreciation of the uncertainty, ambiguity and limits to knowledge, and how this might influence analyses and interpretations
Autonomy and Professional Capacity	
Qualities and transferable skills necessary for further study, employment, community involvement and other activities requiring;	
A&PC1	The exercise of initiative, personal responsibility and accountability in both personal and group contexts;
A&PC2	Working effectively with others;
A&PC3	Decision making in complex contexts;
A&PC4	The ability to manage their own learning needs in changing circumstances, both within and outside the discipline and to select an appropriate program of further study; and
A&PC5	Behaviour consistent with academic integrity and social responsibility

b) Describe how the program curriculum and structure supports achievement of the program learning outcomes.

For undergraduate programs, comment on the nature and suitability of students' final-year academic achievement in the program. Provide a program curriculum map to demonstrate the above. This may be an appendix to the proposal document.

The curriculum and its structure carefully build disciplinary knowledge and skills, including more generalizable problem solving and critical thinking skills, along with an awareness of limits and the need for life-long learning. In the final year a project integrates advanced disciplinary knowledge and skills with the organizational context (processes, goals, and mission), to realise a synoptic capstone experience. At the same time, advanced courses in key disciplinary domains, both in the core (machine learning, cloud computing and user driven development) and the chosen stream, round out depth and critical thinking. These

final year experiences embody the application, analysis, synthesis and evaluation levels of Bloom's taxonomy.

Supporting this structure and progression, the learning, teaching, and assessment in this program provides:

- An emphasis on professional skills development within the workplace and at university that is embedded in the learning, teaching and assessment process.
- A clear structure for Personal Tutoring (PT). This provides a personal learning skills tutor inside the University that is complemented by a work mentor. By establishing a single point of contact for student support in both organisations (university and employer), we ensure a simple model for support that removes barriers and enables all parties to be aware of the other's point of view.
- Alternative modes of learning to support the needs, preferences and abilities of all of our students. A mix of approaches such as lectures, seminars, laboratory classes, simulations, videos and self-directed study will be used.
- Using research informed teaching (RIT) as a bridge between research and teaching.
- Use of diagnostic online and in-class testing to identify student progress and individual learning needs. Flexible levels of additional support to challenge exceptional students and support those identified as needing further help to progress.
- The consistent use of a wide range of digital resources including state of the art laboratories and IT equipment, imaginative use of a virtual learning environment and digital library resources.
- Flexible, work-based learning through the use of a novel assessment regime, see section c below.
- Working in partnership with students to enhance their experience, including faculty-student liaison meetings and regular student surveys of learning, teaching and assessment at a course level.

Appendix B for mapping of courses to program learning outcomes. **Appendix C** provides sample course descriptions and course learning outcomes for courses in the program.

c) Describe how student achievement of each of the program learning outcomes is assessed, how that assessment is documented and how the methods and criteria for assessing student achievement are appropriate and effective relative to the program learning outcomes.

It is important to note that it is the University, and specifically course directors, who are responsible for assessing student learning. Employers are expected to provide opportunity, through assigned work, for the student to achieve certain specified learning outcomes, but it is the student's responsibility, with guidance and support from learning skills tutors, course directors and TAs, and to a lesser extent the workplace supervisors, to document their achievement of such learning outcomes. Part of that documentation may be an evaluation by a direct lead (supervisor, team leader) in the workplace. It is the course director who assesses student work against rubrics for learning achievement and assigns a grade.

The strategy for assessment is driven by industry norms, i.e., almost all assignments are asking students to work on activities that are similar to those expected in a technology

related occupation and to present their work in a form that would be acceptable to a majority of employers.

There are two exceptions to this principle. Firstly, academic-only courses, and to a lesser extent the academic component of academic-workplace courses, may use assessments aimed at testing specific critical knowledge, e.g., small programming assignments or understanding of networking and operating systems. Learning will therefore be assessed mostly by traditional means – i.e., a combination of assignments, lab work, quizzes, tests and exams, with each such assessment instrument mapped to course learning outcomes. Secondly, as a mechanism to allow students to be assessed for a project where they need to present verbally, document products or outcomes, and submit a technical solution.

There is a strong emphasis on individual assessment in order to avoid placing a requirement for students to work collaboratively when they cannot easily meet outside of the times they attend university. This recognises that teamwork is cultivated primarily through the workplace. There are also many more coursework assignments than exams, again reflecting a work-based orientation.

Formative assessment will be used throughout and takes a wide variety of forms, including interaction in class, peer feedback on in-class presentations, workshop activity with feedback, on-line quizzes, and tutor feedback on project work.

An important requirement of the assessment is that where possible assessment will be undertaken via documentation of workplace activities. As noted previously, most courses have a component of workplace learning, typically extending beyond the scheduling of the academic component, providing flexibility for students, with the collaboration of their employer, to demonstrate achievement of some of the learning outcomes of a course. In some cases, the learning outcomes of the expected standard assessment may be used by the employer and student to propose a work-based alternative. Regardless, that learning is documented through a workplace portfolio as described below.

It is understood that not all assessment can be based on work undertaken in the workplace, but where possible this will be the preferred mode of assessment. In some cases, students will not be working in the right environment to be assessed in the workplace, despite the period extending beyond the academic component. Additionally, course directors might designate that a unit will be assessed using traditional assessments because of the need for technology that is not widely standardised or to ensure coverage that is not commercial, as in introductory programing. We therefore allow for a dual assessment plan for courses. This will require course directors to specify a traditional assessment for students who are unable to be assessed in the workplace.

The requirements for work-based assessment will specify the essential elements of the work submitted and the grading criteria, which may optionally require a work-based assessor to report on some aspects of the work undertaken. If the employer and student decide that a work-based alternative is necessary, they would provide a proposal that outlines what work the student would undertake to satisfy the assessment requirements.

This proposal would form the basis for negotiation between the employer and the course director. The University will hold a final version of the negotiated proposal in order to document the way in which the assessment requirements were achieved.

In accommodating students undertaking work-based assessments we wish to use flexible hand-in dates, referred to above as the extended period in the scheduling of a course. Non-work-based assessment would be submitted according to a deadline specified by the

course director, as normal, but work-based assessments would have a negotiable deadline in order to allow students to align their work with a sensible due date for submission. For example, if a software development assessment was set for December but the student was not moving to a software development team until March then we would allow that assessment to be submitted in early summer, following negotiations about the assessment proposal with the student's mentor.

Although this alignment of relevant work experience with assignments or projects introduces additional complexity, we believe that in so far as it is possible this approach will provide added value to the students' learning and maximise the connection between theory and practice.

The program has a mandatory requirement for completion of a portfolio that covers all four years. Employers are expected to undertake regular reviews of the students' activities and support the setting of professional objectives, as they would for any other employee. The portfolio will be used to document progress towards the personal and professional objectives set within the host company as well as document the students' progress towards mastery of the learning outcomes as defined within the Digital Technologies program.

The portfolio will:

- Be developed with guidance and support from their personal learning skills tutor, which decreases as personal capability is developed so that it becomes self-sustaining.
- Provide a structured process for recording the development of all new skills and knowledge at all levels of the program within the academic and professional contexts.
- Enable the student to document their experience as learners, the tasks they undertake at work, the connection between courses studied and their work experience, and to support a process of self-reflection leading them to being independent, self-managed professionals.
- Support the creation of personal records, and planning and monitoring progress towards the achievement of personal objectives, connected to the review process that their employer conducts.

The portfolio will be formally assessed both as it relates to completion of each corresponding academic component of a course, and holistically at the end of the program. Personal learning skills tutors and work mentors will guide students in the development of this portfolio. Personal learning skills tutors will review the portfolio from the point of view of its assessment at what would be expected at year 4 and provide formative feedback at set times throughout the program to guide the student in developing an appropriate portfolio. Work mentors will guide the students from the point of view of documenting their work experience and completion of objectives.

The program includes two projects – DIGT3100 9.0 and one of DIGT4200 9.0, DIGT4300 9.0 or DIGT4400 9.0 depending on the stream. In partnership with the workplace, the university will fine-tune the assessed learning undertaken by the student, cognizant of the expected learning outcomes, to maximise the utility of the work undertaken by the student while still progressing through the degree.

The 4000-level project can be viewed as a synoptic project in as much as it will need to

demonstrate achievement of many of the program level outcomes, both disciplinary (PLOs 1 to 4 and 8 and 9) and behavioural (PLOs 5 to 7). The intention is that this project produces a tangible product and that the product has been taken from its initial requirements through to delivery. The nature of the product will vary but will often be a piece of software; it might equally be a report, an evaluation, a technical design, a feasibility study, a business case or some other business artefact. The role of initiative, self-directed learning, organisational process and communications, and alignment to organisational needs will be important parameters.

d) Describe how the program will document and demonstrate that, upon graduation, students will have achieved all degree level expectations as specified by the program learning outcomes. How will this information be used to inform continuous improvement of the program?

(For more information: https://oucqa.ca/guide/assessment-of-teaching-and-learning-2-1-6-a-and-b/)

In order to document and demonstrate that, upon graduation students have achieved degree level expectations the EECS Department has data collection and governance processes in place for its other programs that will also apply to this one. To effect program improvement there are multiple levels to review in a cyclical fashion: the curriculum map, the data collection process, the analysis and interpretation, and the actions to undertake.

The curriculum map provides three different views related to outcomes, topics and progression. The main view of the map connects individual course learning outcomes (CLOs) to the PLOs and UUDLE indicators using the content levels of Introduced, Developed and Applied. The second view of the map is a course-content progression view which shows the relationships among courses in the program via prerequisites and co-requisites. The third view is the curriculum alignment map which aligns student performance assessment data to the UUDLE Indicators. The curriculum and mapping are reviewed by the Program Curriculum Committee on an annual basis.

The data collection process has as a basis standardized UUDLE indicators and standardized rubric descriptors for performance data. Evidence of student learning is collected using direct measurements of student performance (grades, scores, rubrics) from every course in the curriculum and for every assessment tool used in the course, which is then connected to the course learning outcomes. Course directors submit grade distribution data for assessments corresponding to each course learning outcome, allowing, through the curriculum map, the achievement of each program learning outcome to be assessed. The collection of this data over the four years each cohort is in the program will demonstrate the extent to which program level outcomes have been achieved. Data collection occurs each semester where each course director provides the tabulated student performance data to the program director.

Our industry partners form an integral part of the program review process, both in providing data and in providing advice on program improvements. On one level, the undergraduate program director will be responsible for monitoring feedback from employers (particularly through the student mentors/supervisors) and from that feedback synthesizing any programmatic level concerns that would constitute basis for program improvement. On a second level, the program will also maintain close contact with employer partners through an advisory group and, annually, a survey instrument that gathers program-level data concerning both current students as well as graduates. The advisory group will include a

sample of graduates of the program, thereby providing the voice of student stakeholders.

The above sources of data and feedback form the basis for analysis and interpretation which is the task of the Continual Program Improvement committee. This committee will recommend evidence-based improvements through an annual report, which will be considered by the Program Curriculum Committee as well as the Advisory Board, prior to any actual concrete actions being undertaken.

e) Include a description of the progression requirements for the degree program and the graduation requirements.

Progression and graduation requirements are the same as for other honours BSc programs in the Lassonde School of Engineering. Namely, to graduate from the program requires a minimum overall cumulative grade point average (CGPA) of 2.0. To progress in the program requires a minimum CGPA that depends on how many credits have been taken (including credits taken at York University and any transfer credits received) as shown below:

Table 5: Progression Requirements by Credit Range and GPA

Credit Range	Cumulative Overall Grade Point Average Required (includes credits passed and failed at York)
0 to 53	1.7
84 or higher	2.0

In general, we expect students to progress in a cohort. Experience from similar programs at other international jurisdictions has shown the cohort model supports a very strong retention rate. In the event that a student struggles in a particular course, or at the end fails the course, we envisage a collaborative approach with the employer and student to find a path forward. If the course is a strong prerequisite for courses normally taken in the next year it would be necessary for the student to repeat, possibly just the one course if appropriate. Alternatively, there may be approaches, supported by the employer, that allow a student more time to demonstrate their achievement of learning outcomes. If a failed course was not a strong prerequisite it could possibly be repeated while the student continued to make progress. However, the scheduling of courses in the context of working students may restrict the ability to repeat a course alongside courses normally taken in the next year.

In the event a student's overall GPA is below progression or graduation requirements we again envisage a collaborative approach with the employer and student to find a path forward. The normal warnings and sanctions will apply, and the employer will undoubtedly also evaluate the student/employee's progress to arrive at an independent decision about their continued employment in such cases.

Should the student face a hard barrier to progression, such as the loss of employment, the option to switch programs, such as the Bachelor of Applied Science in Computer Science for Software Development, which is also planned for delivery at the Markham campus. The normal process of transfer credit or advanced standing credit assessment would apply, and we would expect the student would normally proceed at roughly the same year level. See Figure 2, below, for a summary of academic progression options.

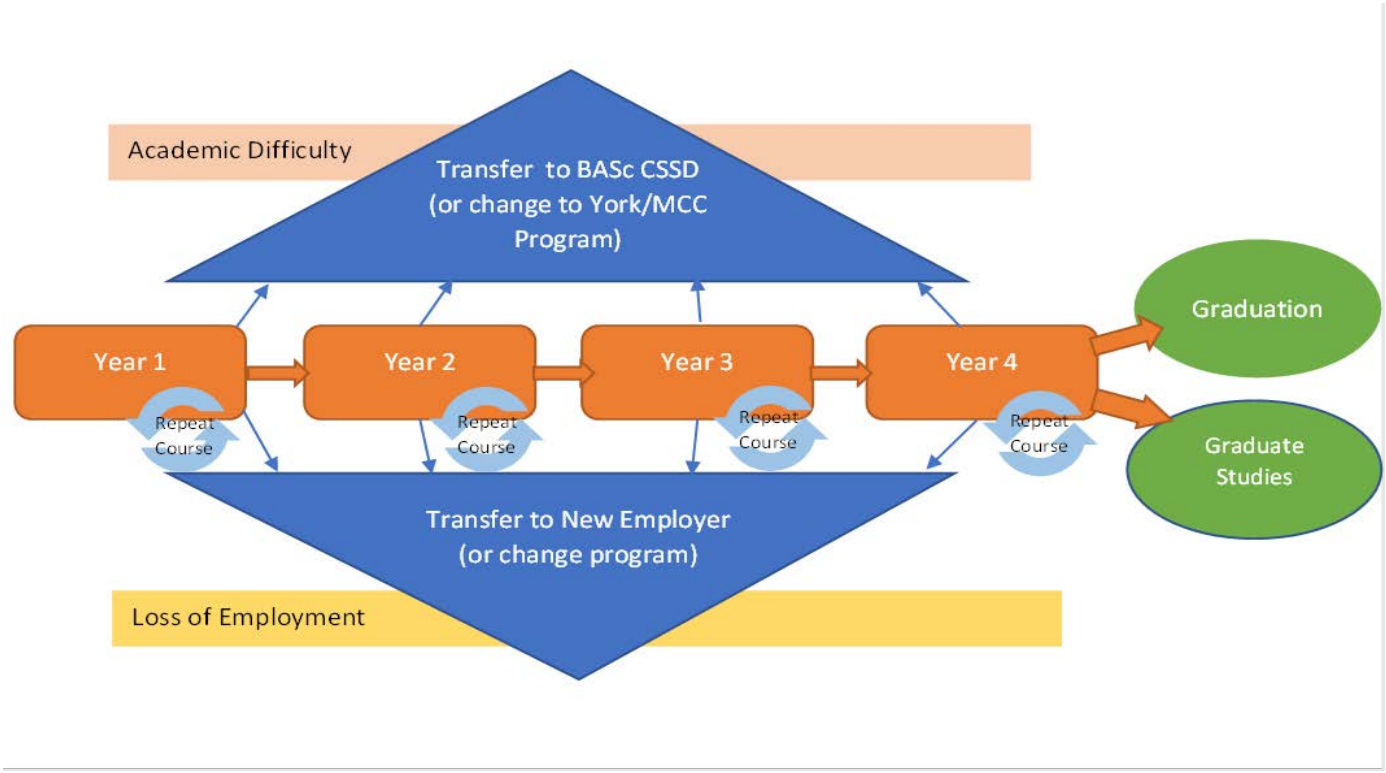


Figure 2 Academic Progress & Options

5.2 Describe the proposed mode(s) of delivery, including how it/they are appropriate to and effective in supporting the program learning outcomes.

As noted above, in order to provide the flexibility required for students who are also employed full-time the pattern of delivery of the academic learning, where it is expected that the student attends the Markham campus, will be determined in consultation with employers. It may be one day a week during each semester. Alternatively, delivery may be more blended, where the student is allowed a weekly 0.5-day release from work to allow for self-study using a synchronous virtual platform (online webinar lecture, online tutorials) interspersed with regular (e.g., every 6 weeks) 3-day blocks to attend campus.

We expect that online learning will also be an important mode of delivery, since in-person classes are likely to be unrealistic for the student/employee, particularly in cases where the employer is outside the Markham region.

5.3 Experiential Education

Describe the experiential components of the program, if applicable. These may include a wide variety of options, including classroom-based activities, community-based learning, or internships and co-op placements. Describe how students are supervised and assessed when participating in experiential education activities outside of the classroom.

The Markham campus is committed to providing students with professional career education and work-integrated learning opportunities where they interact directly with employers and community partners in both the classroom and the workforce, and through both individual and project-based learning. Resources and support have been available during the program development phase to inform faculty colleagues about experiential education activities, skill development and self-reflection and mechanisms for scaffolding these through an intentional course work progression to support student success throughout the academic journey.

Ongoing support will ensure that students are supervised and assessed according to leading practices in work-integrated learning and experiential education in order to equip them with the confidence in their ability to manage their future careers in a world where the only constant is change.

The program will benefit from a dedicated team of Work Integrated Learning and Experiential Education professional staff and leadership at Markham campus, as well as from expertise and collaboration with Keele campus. A collaborative approach to employer and partner engagement will strengthen York's relationships within the community and encourage the type of innovative, interdisciplinary connections required to solve today's most complex challenges. This vision will be achieved through a centrally coordinated strategy, leadership and supports that are locally delivered within the program context. Responsibility for such coordination with central WIL support services will rest primarily with the Business Development Manager and the recruitment and communications staff (see section 7.1).

Graded Feedback & Timelines for Assessment:

For the majority of courses in the program, it is expected that the traditional timelines to provide students with graded feedback and assessment will continue to be respected and practiced. We expect that there may be a few courses where exceptions may occur, such as in the case of practicums or upper-level project-based course offerings. As we continue to develop full course proposals, we expect that any courses having one term that is primarily theory based, followed up by two terms of more integrated work practice to fall under the exemption policy as outlined for practicum/project-based course categories.

Furthermore, we expect any courses running over 2 terms to follow the current deadlines to provide 30% of graded feedback returned by the specified date (e.g., the current Y term requires 30% of graded work to be assessed by Feb 11th). Should there be instances where courses are planned to run for longer duration than two terms and which are not already defined, the program will work with the Registrar's Office to develop appropriate sessional dates for such courses and work to align with current practices.

Academic Petitions & Honesty

The majority of academic petitions processes will continue to replicate existing practices as already specified in our guidelines. This would include: adding a course past the deadline; dropping a course late; deferred standing; extension of deferred standing; degree requirements waived or altered; course overload; repeat course legislation; waive honours standing; coop/internship; letters of permission; pass/fail grades; grade reappraisals; and academic honesty.

The academic colleagues will work closely in partnership with the employer on issues or matters arising around academic honesty and academic integrity. The program academic leadership and dedicated experiential learning staff will maintain rigorous oversight of the students' academic experiences at the employer site. The School is deeply committed to ensuring the academic integrity of the program and providing full-facetted support to students throughout the program. Lassonde will be able to draw on its experience in this realm from its existing co-op option within its programs and from the industry partnership stream in Computer Science. Moreover, partners participating in the program are required to sign a Memorandum of Understanding with the University, under the auspices of the Provost, which will cover the comprehensive terms associated with the work integrated learning placements, and a Placement Agreement (a legal contract – as currently used for Coop) that governs the placement.

Exceptions/exemptions to existing practices are expected to occur specifically in work-based courses in the program, when it pertains to: adding a course past deadline – due to the work-base component being an integral component of the course (and the deferral of work will not be an option).

In order to remain in the program, students must maintain all standing requirements of the existing Honours degree, as well as maintain good standing with the industry partner. The industry partner must commit to a definition of "good standing" that is fair and allows the student ample opportunity to address any issues in order to return to a status of good standing. Students who lose their employment status will have the opportunity to select another program (e.g., BASc in Computer Science Software Development) and/or possibly another employer/program partner.

Another area worth commenting on, which will not change, is with respect to our academic process for petitions to: waive 1-year withdrawal or waive 2-year debarment. It is important to note that the academic decision is decoupled from the employer's decision. If we decided to waive, the student would continue, and also continue as an employee (assuming things were good with the employer). If we decided not to waive, academic progress would be delayed - possibly permanently in the case of debarment. The employer would make a separate decision about the student's employment. In both cases our decision process would not fundamentally change from the current process.

Tuition & Financial Matters/Blocks:

Contractual agreements with a 3rd party paying a students' tuition requires a series of arrangements and agreements to be developed between all parties. In the case of this program, there is a financial relationship between the employer, the student and the university (and possibly with the ministry). Currently, there are some mechanisms in the Office of the University Registrar on 3rd Party Billing that we can leverage to support the learner, but we will continue to enhance the process of working through what additional mechanisms can be adopted to ensure that there are no impediments to students' accessing enrolment into courses and/or academic sanctions that present barriers to proceeding with their studies. We need to ensure that both the academic and financial records of our students in this program are protected and supported by the institution.

In the event of an employer withdrawing from the program, the employer will provide the student and York appropriate notice to ensure the student can find alternate program and/or financial aid arrangements.

Partner Selection Process

Admitting students in the program will require identifying an appropriate employer partner. An organization that is interested to become an employer partner must demonstrate that it is:

1. Committed to the same values as York University with regard to equity, inclusivity, and diversity, in particular as this pertains to equity categories of women, persons with disabilities, members of visible minorities and aboriginal persons, individuals of diverse gender and sexual orientation and all groups protected by the Human Rights Code.
2. Cognizant of issues pertaining to the mental health and well being of the students in the program. In particular, the employer partner must dedicate resources to ensure that the transition to being students and employees is as smooth as possible, and the students have all the support needed to succeed.
3. Able to provide an environment that can facilitate experiential learning in a variety of

subjects, learning levels, and workplace environments.

4. Willing to provide the necessary resources to support students in the program, particularly on the specific technologies utilized by the employer partner, and also on overarching concepts.

In order to establish a new partnership, a proposal must be brought to the EECS Work Integrated Learning (WIL) Partnership committee describing how the employer partner is planning to meet the above requirements. The chair of EECS, as well as the chair of the Science Curriculum Committee will be ex officio members of the WIL Partnership committee. If the committee is satisfied that the prospective partner is able to provide the caliber of work integrated learning expected, it will forward the proposal to the department for approval.

An employer partner that has been approved by the EECS department must sign a Memorandum of Understanding (MOU) with York University agreeing to the stipulations of this proposal. The MOU will specify the conditions under which the partnership may be terminated by either party, as well as the conditions under which a student may be required to exit from the work integrated partnership program. Strong emphasis will be placed on protecting the rights of the student in any dispute that may arise with the employer partner by following applicable University policies, such as the Senate Policy on the Accommodation of Students with Disabilities, the Code of Student Rights and Responsibilities, the Sexual Violence Policy, etc.

The WIL Partnership committee will monitor existing partnerships to ensure that the quality of the education students receive is at the expected level. For this purpose, instructors of the work-based courses, and the Learning Skills Coordinators will report concerns they are unable to resolve to the WIL Partnership committee. This report will include an assessment of whether the student is provided with the necessary learning material, resources, and direct contact with the employer mentor to achieve the learning outcomes, as well as whether the necessary balance between theoretical concepts and practical applications is maintained. The committee will attempt to resolve any issues by addressing the employer directly, but if the employer partner is assessed to be unable to provide the necessary learning environment or unwilling to provide the necessary resources, the committee will recommend to the Lassonde School of Engineering and the Provost the termination of the partnership.

6. Admission Requirements

6.1 Describe the program admission requirements, including the language proficiency requirements.

- 12U English (ENG4U);
- 12U Advanced Functions (MHF4U);
- No prerequisite below 75%; and
- A second 12U Math course is recommended but not required.

An overall average of 12U credits of at least 80% will also typically be required.

Admission of international students, given the requirement of employment throughout the program with a partner employer, is unlikely at the outset. However, since visa students are able to participate in co-op programs based on the fact that employment during co-op terms is a requirement of their program, it is possible that admission may also eventually be extended to visa students. This matter requires further examination and clarification with government partners.

Students will choose a stream, with agreement of their employer, by the end of year two at the latest. The student may provisionally nominate a stream as early as upon admission should they and their employer be in agreement.

6.2. Provide a brief explanation how these requirements are appropriate for the achievement of the program learning outcomes.

The high school courses required for admission into the Digital Technologies program are fewer than the current BSc Computer Science program. This is the outcome of an intentional effort to minimize prerequisites throughout the new program to reduce barriers to participation. In particular, the reduction of high school requirements is designed to open admission to as many students as possible, recognizing that some grade 12 science courses are, regrettably, still a hinderance to some underrepresented groups in the broader field of computer science.

However, prospective students must nevertheless have demonstrated they can apply themselves academically, even if it is not in science. The overall average, along with the alternative/supplementary requirements outlined in section 6.3 will serve to demonstrate this.

6.3 Explain any alternative requirements, if any, for admission into an undergraduate, graduate or second-entry program, such as minimum grade point average, additional languages or portfolios, along with how the program recognizes prior work or learning experience.

There will be both supplementary and alternative admission requirements that will facilitate the entry of non-traditional learners. All students in the program will be employed by a partner organization, and thus we will be developing with those employers' requirements for a supplementary admission package that will assist them in making hiring decisions. The exact nature of this is yet to be determined but we expect it will include components that demonstrate an aptitude for computational thinking, problem solving, and interpersonal skills foundational to the workplace.

We expect interest from both learners who have left the educational system after graduating high school and also from learners currently employed by a partner organization. In such cases alternative admission requirements may include reference letters and a personal interview.

7. Resources

This section provides a description of the resources available to support the delivery of the program and support of students' achievement of the program learning outcomes. In addition to the descriptions, the three tables at the end of this section provide evidence of the above.

7.1 Describe the areas of strength and expertise of the faculty who will actively participate in delivering and further developing the program, focusing on their current status and ability to foster a robust intellectual climate.

We anticipate the faculty complement to be based on the enrollment and growth of the program, and some of the hiring has started in order to secure faculty with the expertise required to deliver this innovative program. Almost all of the faculty who will teach in the program will be newly recruited to York University and sufficient to ensure an excellent program environment.

The EECS Department is currently allocated 24 new faculty members at the Markham campus for the Digital Technologies and Computer Science Software Development (CSSD) programs. Approximately 50% will be available to teach in the Digital Technologies program. However,

it is likely, and desirable, that colleagues in the two programs will collaborate and cross-teach, so the following represents a notional allocation to the programs rather than a fixed demarcation.

The twelve faculty for this program will consist of a mixture of Teaching and Professorial Stream appointments to be determined. Two Teaching Stream faculty and Two Professorial searches are currently underway specifically for Digital Technologies.

A preliminary hiring plan is given below in Table 6, based on a 30:1 average student to faculty ratio for the entire program.

Table 6: Tentative Faculty Hiring Plan

Year	Max. # students	Searches	Available faculty
FW 21-22	-	4	0
FW 22-23	-	3	4
FW 23-24	100	2	7
FW 24-25	200	2	9
FW 25-26	300	1	11
FW 26-27	400	0	12

The relative balance of teaching and professorial stream faculty members and their technical discipline will be adjusted as necessary as the program is rolled out to ensure the necessary teaching resources and relevant expertise. Technical fields for the professorial appointments are also influenced by research priorities for the Markham campus.

For general education and mathematics courses (including embedded components) resources from other programs present at the MCC will be required. The program is not dependent on teaching resources from the Keele campus.

At present, this faculty complement is considered sufficient to staff the proposed program. In the future, it may be desirable to add more technical electives, streams, or certificates. Likewise, the appointment of research chairs or other clusters of scholarly activity would be highly beneficial for the academic environment.

7.2 Describe plans to provide further resources that may be necessary to implement and/or sustain the program.

Due to the unique delivery and partnership structure of this program, dedicated resources will need to hired and recruited beyond the standard administrative set-up for daily operations. Dedicated teaching assistant (TA) support is being planned to support quality and effective instruction in the delivery of the School's programs planned at Markham campus. There are also plans for offering related graduate programs at Markham.

We envision that teaching-stream faculty will serve as Learning Skills Coordinators. A team of faculty will be created that as part of their teaching duties they will also be responsible for the development and assessment of the behavioural skills in the workplace (e.g., communication). They will work collaboratively with the learning skills tutors to keep abreast of students' learning in the workplace, the collection of evidence of that learning through an e-portfolio, and these faculty will have the ultimate responsibility for student evaluation (including final grades). It is important to note that the nature of the Learning Skills Coordinators role is differentiated from the Learning Skills Tutors. The coordinator roles are

part of a faculty appointment, whereas the tutors are professional staff positions to help bridge the gap between workplace-based learning and achieving the academic program learning outcomes. Further details about the Learning Skills Tutors is detailed, below.

The faculty hiring plan above (Table 6) indicates 12 new faculty hires. In total there are 24 new faculty hires planned for two programs that EECS proposed for the Markham campus, the additional 12 being for the other program. Roughly half of these 24 will be professorial stream faculty members who will have graduate students as part of their research enterprise. These graduate students, based at Markham, will be a primary source of TA support. In addition to TA support, the team at Markham will require dedicated supports for the student journey in learning and overall working integrated experience, including:

- Educational Technologist
- Educational Developer
- Learning Skills Tutors
- Business Development Manager
- Marketing and Communications

Educational Technologist and Educational Developer

York University is committed to the design and delivery of the program. However, as learning will be a blend of workplace, online and in-class, it is anticipated that we will need to bring in specific teaching and learning skills to help with assessment design and provide professional development for faculty to enable them to excel in a blended operation. Challenges to overcome are: building a professional and pedagogically sound online component that enables learners from different employers to access learning materials to create assessments that are transferable to different employer contexts; to create e-portfolios for learners to collate their workplace-based learning and demonstrate meeting the learning outcomes.

Due to the integral nature of workplace learning there will be substantial resources devoted to building relationships with partner organisations as we prepare for the launch of the program in Fall 2023. Some of this administration includes brokering external relationship, business development, project management, student outreach, coaching and mentoring students, in addition to the supervision and assessment of learning that will occur in the workplace.

A key responsibility of the educational developer will be the preparation and delivery of training for our workplace partners. Workplace supervisors and mentors are not pedagogical experts but they will be expected to plan workplace activities for student employees that provide learning opportunities related to the learning outcomes of courses the student is taking. While not teaching or assessing learning they are crucial to the work integrated learning process and should be aware, for example, of the role of reflection in forming connections between theory and practice.

Learning Skills Tutors

Learning skills tutors (referred to above in various places) will guide and support students in the workplace. They are the link between the academic program and the learning that can be achieved in the workplace. The role is multi-faceted. On the one hand they will guide students in achieving and documenting learning in the workplace, ensuring they meet both course and program learning outcomes. In this respect the role requires knowledge of the academic program, and of the importance of reflection as the link between academic and workplace learning. In particular, they will support the development of behavioural skills in students by facilitating the learner to find solutions.

Secondly, the role requires an ability to collaborate with employers to ensure their buy-in for

the facilitation of learning opportunities. This would include meetings (at least 3 times per year) with employers flagging what outcomes students will be expected to achieve and determining what opportunities there are for the student to learn on the job (on their own or shadowing). This is done in conjunction with the employer mentor.

Thirdly, they will be a first-line resource (on the academic side) for students who may be experiencing difficulties in the workplace and, if necessary, facilitate engaging with the employer's evaluation and remediation process. They would be the conduit to access additional help within the university depending on the type of issue that needs escalating.

In many respects the learning skills tutor is the go-to person for the learner. We expect the ratio of learning skills tutors to students to be roughly 1:80.

Marketing and Communications

As this is a new learning model for Canada, information in a range of formats will be needed to build awareness about what integrated programs are, and that they are an equal and valuable alternative alongside a typical university program. The creation of a brand, development of program information material, and marketing and promotion is essential for employers and learners. Research from the UK[21] has shown that a lack of information was the biggest barrier high school teachers offering advice to their pupils in work integrated learning programs and so it's vital that this pilot addresses this effectively.

York University and the Lassonde School will significantly enhance its communication with employers, with a focus on recruitment purposes – especially small-and medium-sized enterprises (SMEs). Equally, we must find ways to communicate effectively with learners who typically do not intend to progress to post-secondary education. York will need specific skill sets to do all of this, which is outside traditional modes of engagement. It will need to bring in new skills and provide training to staff. A successful campaign will result in:

- All learners will be paid employees of the respective companies in the pilot
- A blend of current employees, and new employees coming in through the pilot to include:
  - high school students from local schools, e.g., York Region District School
  - a diverse mix of learners (Black, Indigenous, New immigrants)
  - a higher proportion of female learners.

As part of achieving this diversity Lassonde is planning to develop a Social Mobility & High School Preparation Program**.** This is a program that will help potential learners succeed academically and in the workplace. It will provide a pathway for youth from lower socio-economic or racial backgrounds, newcomers to the GTA, and women (under-represented in ICT sector) to prepare for entry to employment and to the Digital Technologies program. Essentially the preparation program will support the upskilling of youth to sell themselves (e.g., interview support, resume writings) as they apply directly to partner employers to secure a job alongside their program of study.

We anticipate that the Digital Technologies program will recruit 100 learners per year, over a 4 year time-scale. Its steady state will have 400 learners employed by approximately 150 employers.

Business Development Manager

A Business Development (BD) Manager will lead the employer outreach and recruitment process. Relationships with employers are crucial. This role is a client manager and has close

[21] 22 https://www.suttontrust.com/wp-content/uploads/2020/05/Degree-Apprenticeships-Levelling-Up.pdf

relationships with Early Talent Managers and HR teams of employer partners and prospective partners. The BD Manager is the point of contact to market the program to prospective employers. The BD manager will need to set up processes to ensure that the learners are employed.

7.3 Comment on the anticipated role of retired faculty and contract instructors in the delivery of the program, as appropriate.

It is anticipated that a small subset of courses in the program will be delivered by part-time faculty who bring a specialized area of expertise from industry to the program, along with a couple of recent retirees from the department who have subject area expertise.

7.4 Where applicable, identify major laboratory facilities/studio space/equipment that will be available for use by undergraduate and/or graduate students and to support faculty research, recent acquisitions, and commitments/plans (if any) for the next five years.

All programs of instruction and fields of research will be accommodated in a new 10-storey building. The top two storeys of this building totaling 60,000 square feet will be shelled only. It is expected that as new spaces are required these floors will be developed to fulfill those emerging needs.

The plans currently include one instructional laboratory in each of the Physics, Biology, and Chemistry disciplines as well as a robust suite of preparation and support spaces. There are four state-of-the-art computer labs for instruction designed specifically to support the School for the new Digital Technologies program as well as Computer Science for Software Development. Two additional computer labs will support other computational instruction.

There are two Maker Spaces, one in the Library and the other associated with Arts Media and Performance Design (AMPD) with comprehensive equipment suites in each which support the creation of content and objects using various digital and analog means. Both the Library and AMPD also house content creation and editing suites with well-equipped lending libraries of equipment for digital, film and sound. The Library also has a gaming lab, equipped with a large wall-to-wall multiscreen display and a comprehensive array of inputs and digital components permitting gaming and game development in almost any format.

AMPD has several studio spaces assigned. There are two trans media studios which, as the name suggests, support creation and presentation of content in many media. These are intended for teaching and research use. There is a physical studio which can act as a black box theatre, dance studio and/or multimedia performance. There is a presentation room for small group seminars and presentation of film/video. Finally on the main floor there is a Gallery for presentation of work in any media.

Faculty research project spaces have been provided for LSE and AMPD. A small server room has been included to support LSE researchers. Research activities by groups in the Faculty of Liberal Arts and Professional Studies (LA&PS) will be supported in the office suite provided on floor 8, to the faculty.

Furthermore, there is an Experiential Education Hub on floor 3 intended to provide administrative space and support for upper year student work on capstone projects and act as an intersection for work with industry partners, students, and faculty.

7.5 Describe the office, laboratory and general research space available that will be available for faculty, undergraduate and/or graduate students, including the availability of common rooms for faculty and graduate students, administrative space. If applicable, describe any commitments/plans for the next five years.

Laboratory and general research space have been described in section 7.3 above. It is worth noting that as new research clusters are formed it is expected that they will be accommodated within space assigned to faculty offices or should the demand require it other spaces will be reassigned to this purpose until growth requires fit out of floors 9 and 10 to house larger groups.

Every Faculty has a suite of offices for faculty members and administrative staff. Each of these suites has access to meeting rooms of various sizes, networking lounge space, kitchenettes and various filing and storage facilities. Science, AMPD and LSE share the 7th floor. LA&PS occupies almost the entire 8th floor which is equipped as the other Faculties on floor 7 but also offers separate enclosed lounge/ study spaces for graduate and undergraduate students.

There are several large study areas in the Library to support varying degrees of activity and quiet. Rooms are furnished and designated to permit collaborative work, quiet study and mixed-use including study and socializing. Every floor in the building except floors 7 and 8 has informal student lounge and study space off the main corridors. On the classroom floors 4 and 5 there is also significant bench seating installed in corridors, equipped with power to allow students to connect their devices while filling in time between their classes.

Faculty administrative support is lodged with the faculty office spaces on floors 7 and 8. There is also a suite of offices for the Deputy Provost functions on floor 7. All faculty and staff offices are on floor 3 with the Library collection, study spaces, editing suites, gaming lab and maker space. All student service functions including advising, counseling, alternate exam facilities, supplemental instruction and tutoring are located on floors 1 and 2.

7.6 As appropriate, comment on academic supports and services, including information technology, that directly contribute to the academic quality of the program proposed.

The proposed program will be supported and supplemented by a suite of academic success supports and services that contribute to the quality of the program and the success of students. They include academic advising, accessibility services, general learning skills (e.g., time management, critical thinking, reading and note-taking), discipline specific supports (e.g., writing and numeracy skills), and peer-based learning supports such as peer tutoring and Supplemental Instruction. Students' sense of belonging and community within their program is strengthened through a robust first year orientation and transition program, the active involvement of peer mentors, and a program specific student club/organization. To round out the student experience, students will have access to both in-person and remote student services delivered by staff based at Markham and Keele campuses. Holistic student services include registrarial services, student finances and bursaries, health and wellness support and programs, and student activities and involvement programs.

Ongoing engagement with employers requires significant support, some of which has been discussed above as it relates specifically to student-facing and academic matters. In addition, onboarding of employers will require due diligence with respect to their capacity not only to provide learning opportunities but also to support students in numerous ways, including through internal practices for supporting employees through potential conflict, harassment and other difficulties. We envisage developing a legal contract articulating the relationship and expectations between the university, employer and student. We expect that such a contract would also clarify issues such as confidentiality and intellectual property. This will not replace the normal employment contract.

7.7 Describe how the available resources will support the anticipated class sizes and supervision of any experiential education activities.

The program is developing a teaching resource delivery model that will effectively provide a coordinated approach between the academic colleagues and the employers to supervise and plan the appropriate class cohorts and activities. Furthermore, there will be a team of support staff to work alongside the academic colleagues and employers to support the students and learning objectives. In part, these resources are captured under the faculty complement as noted in 7.1 and 7.5 noted above. See draft course planning model in Table 7, below.

Table 7: Draft Course Planning Model

Cohort	100	90	90	90
Course Size	100	90	45	30
# SEC/CRS/Yr	1	1	2	3

PROGRAM	**YR1**	**YR2**	**YR3**	**YR4**	**Steady State Total**
CORE	4	8	10	12	34
SERVICE*	3	0	0	0	3
ELECTIVE**	0	0	6	12	18
Total Courses	7	8	16	24	55

*teaching done by other MCC programs

**shared with EECS/CSSD/SC/LA&PS

Note: elective courses are shared with other programs at Markham, including the BASc in Computer Science for Software Development (CSSD).

7.8 For graduate programs, indicate financial support that will be provided to master's and/or PhD students, including eligibility requirements and how this support will be sufficient to ensure adequate quality and numbers of students.

Not applicable.

7.9 Indicate whether the new program is intended to be funded or to be a full-cost recovery program.

The program is intended to be funded under the institutional operating grant in conjunction with support under a defined employer-sponsorship agreement. Additional pilot opportunity grant funding is currently being explored with both federal and provincial governments to underpin the unique start-up costs for this new type of work integrated program model.

This program is designed with intensions to recruit and retain diverse student bodies focusing on opening access to higher education, including reaching out to socio-economically disadvantage groups of our population, mature aged individuals, females, indigenous and non-traditional learners who often experience barriers in access to higher education and learning, in part due to a lack of fiscal resources. One of the core advantages of this program structure is to have the employer sponsor the student tuition as part of this work-learning experience. In this program, it is imagined that in cooperation with the government, OSAP subsidies would be directed to supporting targeted underrepresented groups. Where additional resources may be made available to support the participation of individuals in pursuit of their studies (e.g., single-parents, first generation students, refugees, etc.) and provide the structures for them to further their success by not being constrained by significant debt load.

7.10 Describe other indicators of the quality of the program that may not have been covered above.

In addition to the culmination of reporting, assessment and feedback provided in the portfolios, it is expected that the summative evaluations gathered through performance reviews, student-employer surveys, and course evaluations will provide annual feedback to benchmark and measure several attributes and aspects on the quality of the program.

Of significance in the development of this program, is that the School is currently working with the CIO Strategy Council and TECHNATION to establish and set up program standards at the Bachelor and Masters level to support how this program contributes to the professionalization and professional recognition in authoritative professional bodies such as the ICT sector.

A mixed method design will be used to collect performance metrics (KPIs) and conduct targeted evaluations to assess the nature and extent to which expected outcomes have been achieved, as well as identifying other 'unexpected' outcomes. The School is developing a logic model for the program that identifies the expected primary outcomes and longer-term impact.

Multiple pre-post measures will be collected from learners and employers through ongoing administrative data collection as well as through web-based surveys, interviews, focus groups and e-Delphi approaches. Quantitative and qualitative data will be collected to assess the processes used for implementation and gain insights to inform ongoing program improvements. The final determination of KPIs will be made in association with the funder to ensure the data collected will be responsive to accountability requirements as well as contribute to the growing body of knowledge on the Canadian WIL ecosystem. One of the focal points of evaluative work will be to learn from the pilot program and use the new knowledge to inform the expansion of the model to other sectors, university programs and jurisdictions.

The evaluation will also be integrated with our partner's work on the development of this program. Given its extensive experience with WIL, CEWIL is taking the lead on developing and implementing a quality assurance process.

Currently we are hiring new faculty explicitly for the Markham campus. These faculty will form the core participants in delivering the program. Although we cannot yet list them in the table, we expect that all existing faculty in the Department of Electrical Engineering and Computer Science who are more closely associated with computer science and software engineering (as opposed to electrical engineering) might wish to participate on an ad hoc basis as their personal circumstances allow. However, we list in the table only those faculty who have either been directly consulted during the development of the proposal or who are closely aligned with the streams of the program. Table 8, below, is a list of faculty members in EECS with direct expertise in the field of digital technologies and can be further consulted.

Table 8: Listing of Faculty in Digital Technologies

Faculty Name & Rank	Area(s) of Specialization
John Amanatides, Assoc. Prof.	Computer graphics, image synthesis
Amir Chinaei, Assoc. Prof., TS	Software engineering, cybersecurity
Vassilios Tzerpos, Assoc. Prof.	Machine learning, signal processing

Larry Zhang, Asst. Prof	Social network analysis, computing education

The following list of faculty members in EECS that will act as local consultants that can offer expertise if called upon for particular subject areas and/or act as guest lecturers in the program:

Table 9: Listing of Faculty in EECS

Faculty Name & Rank	Area(s) of Specialization
Marzieh Ahmadzadeh, Asst. Prof., TS	HCI, STEM education
Aijun An, Prof.	Data mining, machine learning
Marcus Brubaker, Asst. Prof.	Computer vision, machine learning
Parke Godfrey, Assoc. Prof.	Database systems
Jarek Gryz, Prof.	Database systems
Hui Jiang, Prof.	Machine learning
Zhen Ming Jiang, Assoc. Prof.	Software engineering
Hamzeh Khazaei, Assoc. Prof.	Cloud computing, distributed systems
Maleknaz Nayebi, Asst. Prof.	Software engineering
Uyen Trang Nguyen, Assoc. Prof.	Mobile networks
Manos Papagelis, Assoc. Prof.	Datamining, knowledge discovery
Yan Shvartzshnaider, Asst. Prof.	Privacy and security
Ruth Urner, Asst. Prof.	Machine learning
Natalija Vlajic, Assoc. Prof.	Network security, communication systems
Chen-Wei Wang, Asst. Prof., TS	Software engineering
Song Wang, Asst. Prof.	Software engineering

8. Enrolment Projections

8.1 Indicate the anticipated implementation date (i.e. year and term of initial in-take) and provide details regarding the anticipated yearly in-take and projected steady-state enrolment target, including when steady-state will be achieved.

We anticipate an annual intake of 100 students into the program starting in the fall of 2023. With anticipated attrition rates applied year over year consistent with work integrated learning programs offered at other jurisdictions (e.g., United Kingdom), we anticipate a steady state enrolment of 383 students by the fall of 2027. See Table 9, below, for detailed enrolment projections.

Table 9: Enrolment Projections

	YR1	YR2	YR3	YR4	YR5+	TOTAL
2023-24	100					100
2024-25	100	95				195
2025-26	100	95	90			285
2026-27	100	95	90	81		366
2027-28	100	95	90	81	16	383
2028-29	100	95	90	81	16	383
2029-30	100	95	90	81	16	383
2030-31	100	95	90	81	16	383
2031-32	100	95	90	81	16	383
2032-33	100	95	90	81	16	383

York University Quality Assurance Procedures (YUQAP)
New Program Appraisal

External Appraisal Report on the Proposed New BASc in Digital Technologies

External Reviewer: Dr. Norah McRae, Associate Provost, Co-operative and Experiential Education, University of Waterloo

1. Outline of the Visit

- Interviews undertaken with:
    - Lyndon Martin (Vice Provost, Academic)
    - Alice Pitt (Senior Advisor, Markham Academic Strategic Planning)
    - Peter Cribb (Professor Emeritus LSE)
    - Richard Hornsey (Chair, Department of EE and CS, LSE)
    - Amir Chinaei (Faculty member)
    - Vassilios Tzerpos (Faculty member)
    - Jane Goodyear (Dean, Lassonde School of Engineering)
    - Dan Palermo, (Vice Dean LSE)
    - Suprakash Datta, (Assistant Professor, Vice Chair UG Science)
    - Sebastian Magierowski (Associate Professor, Vice Chair UG Engineering)
    - Larry Zhang (Assistant Professor, teaching stream)
- **No facilities were seen**
- **No other activities relevant to the appraisal**

2. General Objectives of the Program

- Is/are the program name and degree designation(s) appropriate? **Yes**
- For graduate programs that wish to have a Quality Council endorsed field(s), are the fields indicated in the proposal appropriate? **N/A**
- Are the general objectives of the program clear and are they consistent with University and Faculty missions and academic plans? **Yes**

3. Need and Demand

- Is there sufficient explanation of need/demand for the program? **Yes, however it is unclear the level of demand and sustainability of commitment from industry for the modality of Degree Apprenticeship which is a new model of work-integrated learning in Canada.**

4. Program Content and Curriculum

- Does the curriculum reflect the current state of the discipline or area of study? If applicable, comment on the appropriateness of any unique curriculum or program innovations or creative components. **The unique curriculum being proposed is developed around the model of Degree Apprenticeships which is new in the Canadian context. This could very well be an exciting differentiator for this program and I applaud the creative thinking that has gone into trying to establish this within this program. There is no doubt that Canadian industry continues to seek new ways to upskill their employees, and is eager for opportunities to engage with post-secondary institutions in new ways. The novelty of this program will require considerable effort to bring awareness to industry, prospective students and also to the academic unit delivering this unique approach to teaching and learning.**

- For undergraduate programs, comment on the appropriateness of the anticipated class sizes. **Seems appropriate – the assumption being that enough industry partners are available for the students.**

However, the nature of this program will exclude visa students, it is unclear the importance of visa students in the strategic enrolment management plans of the institution.

- For graduate programs, is there adequate evidence that each graduate student in the program will take a minimum of two-thirds of the course requirements from among graduate level courses? **N/A**

5. Program Structure, Learning Outcomes and Assessment

- Are the program requirements and learning outcomes clear, appropriate and in alignment with the relevant degree level expectations? **Yes**
- Comment on the appropriateness of the program curriculum and structure to support the program learning outcomes. For undergraduate programs, comment on the nature and suitability of students' final-year academic achievement in the program. **The program curriculum and structure seems appropriate. The establishment of occupational standards, co-created with industry, as the basis for the learning outcomes is excellent. Consideration should be given to additional curriculum to be created and delivered to both students and their employers that specifically addresses learning in this type of modality (ie WIL), for example how students should engage appropriately and the establishment of a positive learning environment in the workplace. It was unclear initially if reflective practices was imbedded in the curriculum through every year of the program as it was explicitly mentioned in years 1 and 2, but not in years 3 and 4. Clarification from the academic team indicated these practices would be included in the projects required in the 3rd and 4th years. It might be useful to call this out more explicitly as reflection on learning and development of self in addition to reflection on the completion of a project. Furthermore, consideration might be given to adding a "meta-reflection" as part of the final year that helps the student bring it all together – their four years of learning, their experience within industry and what this means for their next step upon graduation. This sets the stage for lifelong learning.**

- For research-focused graduate programs, comment on the nature and suitability of the major research requirement(s). **N/A**

- Are the methods and criteria for assessing student achievement of learning outcomes and documenting those are appropriate and effective? **Yes, if scaffolded and implemented appropriately the use of occupational standard learning outcomes, portfolios and reflection are all excellent practices. Ensure that students are trained in the use of portfolios as a way to track their learning development. The use of personal tutors is a great idea, but when probed the UG program directors did not confirm that they would be providing oversight and ensuring consistency and the balancing of demands from employers and the academic faculty, as is stated in the proposal. This should be clarified as this oversight will be required. It was also unclear who these tutors would be and how exactly this great idea would be operationalized. Similarly, it was unclear if the workplace based learning mentors (which is also a good idea) had been thought through. How would they be chosen? Who will prepare them to do fair assessment of workplace learning? What policies will be in place to support and protect students who are also employees of the organization? How will the needs of the academic program be balanced with the demands of the workplace?**

- For graduate programs, comment on the appropriateness of the program length, including on how students' time-to-completion will be supported and managed to ensure that the program requirements can be reasonably completed within the proposed time period. **N/A**

- Comment on the appropriateness of the proposed mode(s) of delivery to meet the program learning outcomes. **With students being employed 80% of their time during this program, flexibility in delivery will be critical, and agreement from employers will be necessary to ensure students are able to appropriately engage in the program**.

- Comment on the appropriateness of the experiential education component of the program, if applicable. The development of a Degree Apprenticeship could be very exciting in the Canadian context. **There will**

be challenges with all stakeholders (faculty, industry and students) understanding the implications of this model and the interconnection of this model with other forms of WIL across York. It was unclear if the interconnections had been thought through. For example, will similar policies apply, what about use of a program information system, marketing and communications to industry? When engaging with external communities, consistency and coherence is important. Furthermore, finding sustainable funding for this program will be an interesting challenge – as identified by the Dean. However, it is important to try new ways at tackling the need for programs such as this to support learners from different paths, and industry in different ways.

6. Admission Requirements

- Are the admission requirements appropriately aligned with the program learning outcomes? **Yes, but alternative ways of assessing admissibility based on the identified occupational standards might be a good idea.**
- Is there sufficient explanation of any alternative requirements, if any, for admission into an undergraduate, graduate or second-entry program, such as minimum grade point average, additional languages or portfolios, along with how the program recognizes prior work or learning experience? **Not really**.

7. Resources

For all programs

- Adequacy of the administrative unit's planned utilization of existing human, physical and financial resources, and any institutional commitment to supplement those resources, to support the program. **The proposal contained some mention of the need for WIL program support, upon probing the commitment to provide this was stated by the Dean. However, the proposal would be improved with explicit reference to the WIL staff resources that will be needed to ensure the success of this program.**
- Appropriateness of the collective faculty expertise to contribute substantively to the program. **Yes, however the question of personal tutors and how those resources fit into the overall program remains unclear.**
- Participation of a sufficient number and quality of faculty who are competent to teach and/or supervise in the program, including qualifications, research, innovation and scholarly record. **Yes, for this program ensuring faculty have experience interacting with industry will be important.**
- Evidence that there are adequate resources (e.g. library, laboratory, studio space, equipment) to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. **Yes, however ensuring that the industry partners have adequate resources to support the students learning will be an important additional consideration given the unique nature of this program.**

Additional criteria for undergraduate programs only

- Evidence of and planning for adequate numbers and quality of: (a) faculty and staff to achieve the goals of the program; or (b) of plans and the commitment to provide the necessary resources in step with the implementation of the program; (c) planned/anticipated class sizes; (d) provision of supervision of experiential learning opportunities (if required); and (e) the role of adjunct and contract faculty. **Mention has been made of the need to identify WIL staff resources and the student tutor resources.**

Additional criteria for graduate programs only

- Evidence that faculty have the recent research or professional/clinical expertise needed to sustain the program, promote innovation and foster an appropriate intellectual climate. **Yes, especially those with relevant and current industry experience**.
- Where appropriate to the program, evidence that financial assistance for students will be sufficient to ensure adequate quality and numbers of students. **Assuming that students will be earning a salary while employed, this should support the students' finances.**
- Evidence of how supervisory loads will be distributed, and the qualifications and appointment status of faculty who will provide instruction and supervision. **Yes.**

8. Quality of Student Experience

- Is the evidence of a program structure and faculty research that will ensure the intellectual quality of the student experience? **Yes, however care needs to be taken in balancing the demands of the industry partners and those of the academic unit. Industry partners need to be prepared to engage as educational partners providing the resources required for the assignments and projects, supportive assessment and feedback and space for meaningful reflection. When partnering with industry in this way there need to be policies and practices in place that ultimately protect the student from the power dynamic of being between two sets of demands. How is the student's degree progression protected if they become unemployed? Finally, while deep learning can happen in the situation where the learner remains with one industry partner throughout their degree, there is significant benefit in being able to experience more than one organization. Consideration might be given to building in a term where students work for a different industry partner – this provides more opportunity for the students to transfer their learning to other contexts (very important for the future of work) and to build their networks (very important for career success).**

9. Other Issues

If interested, I use a rubric to evaluate WIL in programs: basically it breaks down what needs to be factored in using P.E.A.R. (pedagogy, experience, assessment and reflection) before, during and after the WIL term by each stakeholder (institution, student and employer). The Quality WIL Framework developed at the University of Waterloo provides an explanation of this approach. https://uwaterloo.ca/work-learn-institute/projects/quality-wil-framework

10. Summary and Recommendations:

If the program can sort out some of the challenges noted above, it would be a good addition to the menu of WIL in Canada and offer an interesting and effective way to teach this important material. I hope that a funding model can be established that allows this program to be both sustainable and scaleable. It would also be great to figure out a way to make this available to visa students – but recognizing current work visa restrictions this might not be possible.

I would strongly recommend that the York WIL community is engaged in the further development and refinement of this program.

MEMO

TO: Lyndon Martin, Vice-Provost Academic

FROM: Peter Cribb, Professor Emeritus, Lassonde School of Engineering

CC: Richard Hornsey, Chair, Department of Electrical Engineering & Computer Science
Dan Palermo, Vice Dean, Lassonde School of Engineering
Jane Goodyer, Dean, Lassonde School of Engineering
Alice Pitt, Senior Advisor, Markham Academic Strategic Planning

SUBJECT: Program Response to the External Appraisal Report on the Proposed New BASc in Digital Technologies

DATE: October 29, 2021

We are thankful for Dr. Norah McRae to take the time in completing the External Appraisal Report for the new Bachelor of Applied Science in Digital Technologies program. Below is a summary of our response to the feedback she provided in her report.

<u>Need and Demand</u>

- **Is there sufficient explanation of need/demand for the program?** *Yes, however it is unclear the level of demand and sustainability of commitment from industry for the modality of Degree Apprenticeship which is a new model of work-integrated learning in Canada.*

It is not possible to fully predict the level of demand and sustainability of commitment from industry in Canada. Experience in England where similar programs have been running for about 6 years now indicates continuing strong interest and commitment from industry partners. We expect the situation in Canada to be similar.

<u>Program Content and Curriculum</u>

- **Does the curriculum reflect the current state of the discipline or area of study? If applicable, comment on the appropriateness of any unique curriculum or program innovations or creative components.** *The unique curriculum being proposed is developed around the model of Degree Apprenticeships which is new in the Canadian context. This could very well be an exciting differentiator for this program and I applaud the creative thinking that has gone into trying to establish this within this program. There is no doubt that Canadian industry continues to seek new ways to upskill their employees, and is eager for opportunities to engage with post-secondary institutions in new ways. The*

novelty of this program will require considerable effort to bring awareness to industry, prospective students and also to the academic unit delivering this unique approach to teaching and learning.

- **For undergraduate programs, comment on the appropriateness of the anticipated class sizes**. *Seems appropriate – the assumption being that enough industry partners are available for the students. However, the nature of this program will exclude visa students, it is unclear the importance of visa students in the strategic enrolment management plans of the institution.*

We are planning extensive and continuing outreach efforts to industry. We observe that extensive effort was required to build the trailblazer team and are therefore aware of the challenge ahead. Similarly, we are planning a communications and marketing campaign to recruit prospective students. At this time we do not see a clear path to the admission of visa students, although we note in the brief that visa students can obtain employment in Canada when participating in a work placement (such as co-op) that is required in their program.

The offering academic unit will be supported by an educational developer, educational technologist, the existing Lassonde Education Innovation Studio (LEIS), and the Teaching Commons as appropriate.

<u>Program Structure, Learning Outcomes and Assessment</u>

- **Are the program requirements and learning outcomes clear, appropriate and in alignment with the relevant degree level expectations?** *Yes*
- **Comment on the appropriateness of the program curriculum and structure to support the program learning outcomes. For undergraduate programs, comment on the nature and suitability of students' final-year academic achievement in the program.** *The program curriculum and structure seems appropriate. The establishment of occupational standards, co-created with industry, as the basis for the learning outcomes is excellent. Consideration should be given to additional curriculum to be created and delivered to both students and their employers that specifically addresses learning in this type of modality (ie WIL), for example how students should engage appropriately and the establishment of a positive learning environment in the workplace. It was unclear initially if reflective practices was imbedded in the curriculum through every year of the program as it was explicitly mentioned in years 1 and 2, but not in years 3 and 4. Clarification from the academic team indicated these practices would be included in the projects required in the 3rd and 4th years. It might be useful to call this out more explicitly as reflection on learning and development of self in addition to reflection on the completion of a project. Furthermore, consideration might be given to adding a "meta-reflection" as part of the final year that helps the student bring it all together – their four years of learning, their experience within industry and what this means for their next step upon graduation. This sets the stage for lifelong learning.*

- **Are the methods and criteria for assessing student achievement of learning outcomes and documenting those are appropriate and effective?** *Yes, if scaffolded and implemented appropriately the use of occupational standard learning outcomes, portfolios and reflection are all excellent practices. Ensure that students are trained in the use of portfolios as a way to track their learning development. The use of personal tutors is a great idea, but when probed the UG program directors did not confirm that they would be providing oversight and ensuring consistency and the balancing of demands from employers and the academic faculty, as is stated in the proposal. This should be clarified as this oversight will be required. It was also unclear who these tutors would be and how exactly this great idea would be operationalized. Similarly, it was unclear if the workplace based learning mentors (which is also a good idea) had been thought through. How would they be chosen? Who will prepare them to do fair assessment of workplace learning? What policies will be in place to support and protect students who are also employees of the organization? How will the needs of the academic program be balanced with the demands of the workplace?*
- **Comment on the appropriateness of the proposed mode(s) of delivery to meet the program learning outcomes**. *With students being employed 80% of their time during this program, flexibility in delivery will be critical, and agreement from employers will be necessary to ensure students are able to appropriately engage in the program.*
- **Comment on the appropriateness of the experiential education component of the program, if applicable**. *The development of a Degree Apprenticeship could be very exciting in the Canadian context. There will be challenges with all stakeholders (faculty, industry and students) understanding the implications of this model and the interconnection of this model with other forms of WIL across York. It was unclear if the interconnections had been thought through. For example, will similar policies apply, what about use of a program information system, marketing and communications to industry? When engaging with external communities, consistency and coherence is important. Furthermore, finding sustainable funding for this program will be an interesting challenge – as identified by the Dean. However, it is important to try new ways at tackling the need for programs such as this to support learners from different paths, and industry in different ways.*

We are planning a training (onboarding) program for employers that will address how to support the learning needs of students in the workplace. There is a first-year course in teamwork and communications which will include elements of learning from experience, and another in Workplace Reflection in which learning how to reflect, as well as the use of the ePortfolio to document learning, is a key focus. As we develop detailed curriculum the support for students' understanding of how to learn from the workplace will be a key focus. Reflection as a component of the project courses in the third and fourth years has been articulated in the brief course descriptions that are part of the program brief. We appreciate

the comment concerning meta-reflection in the fourth year and will consider how to achieve this as the detailed curriculum is developed.

Learning skills tutors will themselves be trained through an onboarding process that will address not only curricular and pedagogical concerns but also the workplace environment and methods of interaction with employers and workplace supervisors and mentors. A complete job description that will form the basis for hiring the tutors is in development, including a review of appropriate qualifications.

The individual filling the workplace mentor role will ultimately be a choice made by the industry partner, informed by expectations and guidelines specified by the University. It is important to note that workplace mentors will not assess students from an academic point of view (i.e., with respect to assigning a grade in a course). We have experience with this approach with other experiential education opportunities for our students, such as in our co-op option and the Technology Internship Program (TIP). They will provide support and guidance to the student primarily with respect to the employer's side of the interface between learning and work. As one example, if the student is concerned that their work assignment is not providing meaningful learning opportunities relevant to a course they are taking, and if their direct supervisor is not being responsive, the mentor (perhaps after consultation with a learning skills tutor) would provide a troubleshooting response.

We are also planning to develop, with the help of the University's legal team, a contract between the University/Lassonde and the employer specifying expectations for all parties. This would include issues of workload, and potential exploitation and harassment/abuse. There will also be detailed materials for each course specifying the nature of learning experiences to be provided in the workplace. We expect that this contract will provide protection for the student and help define the balance between workplace and the academy. It will certainly define parameters such as the amount, and nature, of release from the workplace to allow the student/employee to engage with the program.

The University has spent considerable resources to create a central hub for experiential education. We are mindful of the need for careful coordination of activities to avoid issues such as alienating employers through duplication of contacts.

<u>Admission Requirements</u>

- **Are the admission requirements appropriately aligned with the program learning outcomes?** *Yes, but alternative ways of assessing admissibility based on the identified occupational standards might be a good idea.*
- **Is there sufficient explanation of any alternative requirements, if any, for admission into an undergraduate, graduate or second-entry program, such as minimum grade point average, additional languages or portfolios, along with how the program recognizes prior work or learning experience?** *Not really.*

The program brief describes in section 6.3 the supplementary application process intended to facilitate the admission of non-traditional learners. Details are yet to be formalised of course, but alignment with the occupational standard, expressed as "components that demonstrate an aptitude for computational thinking, problem solving, and interpersonal skills foundational to the workplace" is a key criterion.

Resources

- **Adequacy of the administrative unit's planned utilization of existing human, physical and financial resources, and any institutional commitment to supplement those resources, to support the program.** *The proposal contained some mention of the need for WIL program support, upon probing the commitment to provide this was stated by the Dean. However, the proposal would be improved with explicit reference to the WIL staff resources that will be needed to ensure the success of this program.*
- **Appropriateness of the collective faculty expertise to contribute substantively to the program.** *Yes, however the question of personal tutors and how those resources fit into the overall program remains unclear.*
- **Participation of a sufficient number and quality of faculty who are competent to teach and/or supervise in the program, including qualifications, research, innovation and scholarly record.** *Yes, for this program ensuring faculty have experience interacting with industry will be important.*
- **Evidence that there are adequate resources (e.g. library, laboratory, studio space, equipment) to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities.** *Yes, however ensuring that the industry partners have adequate resources to support the students learning will be an important additional consideration given the unique nature of this program.*
- **Evidence of and planning for adequate numbers and quality of: (a) faculty and staff to achieve the goals of the program; or (b) of plans and the commitment to provide the necessary resources in step with the implementation of the program; (c) planned/anticipated class sizes; (d) provision of supervision of experiential learning opportunities (if required); and (e) the role of adjunct and contract faculty.** *Mention has been made of the need to identify WIL staff resources and the student tutor resources.*

The description of resource requirements has been further articulated in the program brief. More detail concerning staff resources has been provided in section 7.1, including the role of learning skills tutors. The resources expected from employers will be articulated in the contract between the University/Lassonde and the employer discussed above.

Quality of Student Experience

- **Is the evidence of a program structure and faculty research that will ensure the intellectual quality of the student experience?** *Yes, however care needs to be taken in balancing the demands of the industry partners and those of the academic unit. Industry partners need to be prepared to engage as educational partners providing the resources required for the assignments and projects, supportive assessment and feedback and space for meaningful reflection. When partnering with industry in this way there need to be policies and practices in place that ultimately protect the student from the power dynamic of being between two sets of demands. How is the student's degree progression protected if they become unemployed? Finally, while deep learning can happen in the situation where the learner remains with one industry partner throughout their degree, there is significant benefit in being able to experience more than one organization. Consideration might be given to building in a term where students work for a different industry partner – this provides more opportunity for the students to transfer their learning to other contexts (very important for the future of work) and to build their networks (very important for career success).*

The supports and processes described above (contract between University and employer, employer training/onboarding, roles of mentor in the workplace and learning skills tutors at the University, etc.) provide the basis for the student experience. Of course, actual experience will further shape these supports and processes. The brief includes more details concerning progression, particularly in the case of termination of employment (see section 5.1e). We appreciate the advice concerning the opportunity to work for a different industry partner and the enhanced learning this may provide. It is certainly something we will explore with employer partners as the program is further developed and both us and employers gain operational experience.

LASSONDE SCHOOL OF ENGINEERING | YORK UNIVERSITÉ UNIVERSITY

OFFICE OF THE DEAN
Suite 204 · Bergeron Centre for Engineering Excellence
4700 Keele Street · Toronto · Canada · M3J 1P3

MEMORANDUM

TO: Lyndon Martin, Vice-Provost Academic

FROM: Dan Palermo, Vice Dean, Lassonde School of Engineering

CC: Peter Cribb, Professor Emeritus, Lassonde School of Engineering
Richard Hornsey, Chair, Department of Electrical Engineering & Computer Science
Jane Goodyer, Dean, Lassonde School of Engineering
Alice Pitt, Senior Advisor, Markham Academic Strategic Planning

SUBJECT: Dean's Response to the External Appraisal Report on the Proposed New BASc in Digital Technologies

DATE: November 1, 2021

Given the Dean's involvement in supporting the development of this program, the response to the reviewer's comments has been delegated to myself in my role as Vice Dean. We are thankful for Dr. Norah McRae's time in completing the External Appraisal Report for the new Bachelor of Applied Science (BASc) in Digital Technologies (DIGT) program. Below is our response to the feedback provided in Dr. McRae's report.

Need and Demand

- **Is there sufficient explanation of need/demand for the program?** *Yes, however it is unclear the level of demand and sustainability of commitment from industry for the modality of Degree Apprenticeship which is a new model of work-integrated learning in Canada.*

There is currently a well-recognized talent shortage in the ICT sector and employers have expressed the urgent need for properly skilled talent in this sector. In addition, this sector will continue to demand talent with the skills and attributes that the DIGT program will provide. We, in the Lassonde School of Engineering (LSE), have been working closely with several industry trailblazer companies, including Ceridian, CGI, Cincy, Cisco, Connect.io, EY, GM, IBM, Mimik Technology Inc., RBC, Saa Dene, Shopify, Telus Health, Treasury Board of Canada Secretariat, and Tribal Scale, in the development of the program's occupational standards.

Program Content and Curriculum

- **Does the curriculum reflect the current state of the discipline or area of study? If applicable, comment on the appropriateness of any unique curriculum or program innovations or creative components.** *The unique curriculum being proposed is developed around the model of Degree Apprenticeships which is new in the Canadian context. This could very well be an exciting differentiator for this program and I applaud the creative thinking that has gone into trying to establish this within this program. There is no doubt that Canadian industry continues to seek new ways to upskill their employees, and is eager for opportunities to engage with post-secondary institutions in new ways. The novelty of this program will require considerable effort to bring awareness to industry, prospective students and also to the academic unit delivering this unique approach to teaching and learning.*

As we move forward to develop the curriculum, we will be investing in the time and resources to advertise the program to prospective employers/industry through our communications and marketing team; a function that the Lassonde School of Engineering has invested in preparation for the launch of novel program deliveries. Together with our recruitment team we have developed a dedicated communication and marketing plan specifically for this program. Tactics include paid programmatic digital and social ads to drive prospective employers and students to a comprehensive website with audience-specific information; stagger messaging around key milestones (fairs/workshops/webinars); utilize stories and data from trailblazers, faculty, and students.

Faculty members from the academic unit responsible for the program, the Department of Electrical Engineering and Computer Science, have been involved in developing the proposal, while the entire Department has been engaged in reviewing and approving the proposal through its curriculum committees and department council meetings.

- **For undergraduate programs, comment on the appropriateness of the anticipated class sizes**. *Seems appropriate – the assumption being that enough industry partners are available for the students. However, the nature of this program will exclude visa students, it is unclear the importance of visa students in the strategic enrolment management plans of the institution.*

Our School believes that as the program moves into the advertising phase and launches in fall of 2023, the number of industry partners will continue to grow. We continue to receive unsolicited inquires and requests from industry to join the program development as trailblazers.

The initial launch of the program will be focused on recruiting domestic students given that the learner will be employed full-time and receive a salary. We recognize that this provides a barrier for international students. We imagine that in future years as the program evolves and we work with government agencies to remove this barrier, we will be in a position to recruit international students. The current enrolment plans for this program are based on domestic students, and the exclusion of international students has been considered.

<u>Program Structure, Learning Outcomes and Assessment</u>

- **Are the program requirements and learning outcomes clear, appropriate and in alignment with the relevant degree level expectations?** *Yes*

- **Comment on the appropriateness of the program curriculum and structure to support the program learning outcomes. For undergraduate programs, comment on the nature and suitability of students' final-year academic achievement in the program.** *The program curriculum and structure seems appropriate. The establishment of occupational standards, co-created with industry, as the basis for the learning outcomes is excellent. Consideration should be given to additional curriculum to be created and delivered to both students and their employers that specifically addresses learning in this type of modality (ie WIL), for example how students should engage appropriately and the establishment of a positive learning environment in the workplace. It was unclear initially if reflective practices was imbedded in the curriculum through every year of the program as it was explicitly mentioned in years 1 and 2, but not in years 3 and 4. Clarification from the academic team indicated these practices would be included in the projects required in the 3rd and 4th years. It might be useful to call this out more explicitly as reflection on learning and development of self in addition to reflection on the completion of a project. Furthermore, consideration might be given to adding a "meta-reflection" as part of the final year that helps the student bring it all together – their four years of learning, their experience within industry and what this means for their next step upon graduation. This sets the stage for lifelong learning.*

We acknowledge that the employer and student will have to be supported to ensure that the student is fully equipped to succeed in this type of learning model. We are currently assessing other approaches to how we can do this. For example, we could operate an employer mentor workshop that is compulsory for all employers that clearly outlines expectations and provides methods and tools for support. As part of the student's onboarding, we may offer mini-modules on how to be a reflective practitioner. In fact, we've had initial discussions with our colleagues in the Libraries on how they could support such learning.

We agree that reflective practice is indeed critical to the students' success in this program. Students are learning by doing and should in turn be provided with opportunities to reflect on their learning in a more formalized manner, such as the use of an ePortfolio to document student learning. We have ensured that reflection has been explicitly built into the first two years of the program as courses, whereas it is more broadly applied at the course learning outcome level in the third and four years of study.

To help clarify the intended scaffolding of the program's structure, attached is Appendix A, which provides an updated curriculum map to illustrate how the program learning outcomes are being achieved over all four years of the program. The "meta-reflection" will be a key component of the synoptic project in the final year.

- **Are the methods and criteria for assessing student achievement of learning outcomes and documenting those are appropriate and effective?** *Yes, if scaffolded and implemented appropriately the use of occupational standard learning outcomes, portfolios and reflection are all excellent practices. Ensure that students are trained in the use of portfolios as a way to track their learning development. The use of personal tutors is a great idea, but when probed the UG program directors did not confirm that they would be providing oversight and ensuring consistency and the balancing of demands from employers and the academic faculty, as is stated in the proposal. This should be clarified as this oversight will be required. It was also unclear who these tutors would be and how exactly this great idea would be operationalized. Similarly, it was unclear if the workplace based learning mentors (which is also a good idea) had been thought through. How would they be chosen? Who will prepare them to do fair assessment of workplace learning? What policies will be in place to support and protect students who are also employees of the organization? How will the needs of the academic program be balanced with the demands of the workplace?*

As detailed in the program brief, the curriculum and its structure carefully build disciplinary knowledge and skills, including more generalizable problem solving and critical thinking skills, along with an awareness of limits and the need for life-long learning. In the final year a project integrates advanced disciplinary knowledge and skills with the organizational context (processes, goals, and mission) to realise a synoptic capstone experience. At the same time, advanced courses in key disciplinary domains, both in the core (machine learning, cloud computing and user driven development) and the chosen specialisation, round out depth and critical thinking. These final year experiences embody the application, analysis, synthesis and evaluation levels of Bloom's taxonomy.

At the time of the review the Undergraduate Program Directors (UPDs) hadn't been in the detailed discussions regarding resourcing the student and mentor support requirements. The program brief has been updated to provide further context around the role of learning skills tutors to support student achievement of learning outcomes. The learning skills tutors will guide and support students in the workplace. They are the link between the academic program and the learning that can be achieved in the workplace. The role is multi-faceted. On the one hand they will guide students in achieving and documenting learning in the workplace, ensuring they meet both course and program learning outcomes. In this respect the role requires knowledge of the academic program, and of the importance of reflection as the link between academic and workplace learning. In particular, they will support the development of behavioural skills in students by facilitating the learner to find solutions and to be able to reflective on what they've achieved.

Secondly, the role requires an ability to collaborate with employers to ensure their buy-in for the facilitation of learning opportunities and to ensure that the employer is working in support of the triparty agreement, which is a legal document outlining the responsibility of the university, the student and the employer. This would include meetings with employers flagging what outcomes students will be expected to achieve and determining what opportunities there are for the student to learn on the job (on their own or shadowing). This is done in conjunction with the employer mentor.

Thirdly, they will be a first-line resource (on the academic side) for students who may be experiencing difficulties in the workplace and, if necessary, facilitate engaging with the employer's evaluation and remediation process. They would be the conduit to access additional help within the university depending on the type of issue that needs escalating. In many respects the learning skills tutor is the go-to person for the learner. We expect the ratio of learning skills tutors to students to be roughly 1:80.

- **Comment on the appropriateness of the proposed mode(s) of delivery to meet the program learning outcomes**. *With students being employed 80% of their time during this program, flexibility in delivery will be critical, and agreement from employers will be necessary to ensure students are able to appropriately engage in the program.*

As previously mentioned, we shall be drawing up a triparty agreement to ensure all parties understand their responsibilities. We will be consulting with York University's legal team to draft a formal agreement between the University, the employer, and the student. Therein, we want to ensure that there are provisions that expectations are made clear to all parties about the nature of this work integrated learning program and what measures are in place should there be mediation or other measures required in case of conflict or if the relationship becomes strained, in particular between the student and the employer. Therein, we also imagine there will be provisions to identify intellectual property rights and ownership of any products, systems, or processes created over the course of the student's time working for the employer.

- **Comment on the appropriateness of the experiential education component of the program, if applicable**. *The development of a Degree Apprenticeship could be very exciting in the Canadian context. There will be challenges with all stakeholders (faculty, industry and students) understanding the implications of this model and the interconnection of this model with other forms of WIL across York. It was unclear if the interconnections had been thought through. For example, will similar policies apply, what about use of a program information system, marketing and communications to industry? When engaging with external communities, consistency and coherence is important. Furthermore, finding sustainable funding for this program will be an interesting challenge – as identified by the Dean. However, it is important to try new ways at tackling the need for programs such as this to support learners from different paths, and industry in different ways.*

We acknowledge that as this is a novel work-integrated learning (WIL) program in Canada it will be in our best interests to clearly articulate the differences between more mainstream models such as co-op and internships. As many of the Markham campus programs have a strong experiential learning and WIL component, the university is investing in support staff to ensure we have a coordinated outreach to employers and a clear marketing campaign that differentiates the various programs planned for delivery there. We have begun working with our colleagues centrally to ensure that our messaging is complementary.

We are currently seeking funding to incentivise small businesses (<100 employees) to take on these students, in addition to incentivising employers to take on marginialized communities, particularly women, Black, and Indigenous youth.

Admission Requirements

- **Are the admission requirements appropriately aligned with the program learning outcomes?** *Yes, but alternative ways of assessing admissibility based on the identified occupational standards might be a good idea.*

As detailed in the revised program brief, there will be both supplementary and alternative admission requirements that will facilitate the entry of non-traditional learners. All students in the program will be employed by a partner organization, and thus we will be developing with those employers' requirements for a supplementary admission package that will assist them in making hiring decisions. The exact nature of this is yet to be determined but we expect it will include components that demonstrate an aptitude for computational thinking, problem solving, and interpersonal skills foundational to the workplace.

We expect interest from both learners who have left the educational system after graduating high school and also from learners currently employed by a partner organization. In such cases alternative admission requirements may include reference letters and a personal interview as appropriate.

- **Is there sufficient explanation of any alternative requirements, if any, for admission into an undergraduate, graduate or second-entry program, such as minimum grade point average, additional languages or portfolios, along with how the program recognizes prior work or learning experience?** *Not really.*

The admission requirements have been revised to include a supplemental application as an alternate requirement for admission for learners. Admission of international students, given the requirement of employment throughout the program with a partner employer, is unlikely at the outset. However, since visa students are able to participate in co-op programs based on the fact that employment during co-op terms is a requirement of their program, it is possible that admission may also eventually be extended to visa students. This matter requires further examination and clarification with government partners.

Students will choose a specialisation, with agreement of their employer, by the end of year two at the latest. The student may provisionally nominate a specialisation as early as upon admission should they and their employer be in agreement.

Resources

- **Adequacy of the administrative unit's planned utilization of existing human, physical and financial resources, and any institutional commitment to supplement those resources, to support the program.** *The proposal contained some mention of the need for WIL program support, upon probing the commitment to provide this was stated by the Dean. However, the proposal would be improved with explicit reference to the WIL staff resources that will be needed to ensure the success of this program.*

As described in the updated program brief, due to the unique delivery and partnership structure of this program, dedicated staff resources will need to be hired and recruited beyond the standard administrative set-up for daily operations. The team at Markham will require dedicated supports for the student's working and learning experience, including:

  - Educational Technologist
  - Educational Developer
  - Learning Skills Tutors
  - Business Development Manager
  - Marketing and Communications

- **Appropriateness of the collective faculty expertise to contribute substantively to the program.** *Yes, however the question of personal tutors and how those resources fit into the overall program remains unclear.*

As mentioned above, the program brief has been updated to provide further context around the role of learning skills tutors. The learning skills tutors will guide and support students in the workplace. They are the link between the academic program and the learning that can be achieved in the workplace. They would be the conduit to access additional help within the university depending on the type of issue that needs escalating. In many respects the learning skills tutor is the go-to person for the learner. We expect the ratio of learning skills tutors to students to be roughly 1:80.

- **Participation of a sufficient number and quality of faculty who are competent to teach and/or supervise in the program, including qualifications, research, innovation and scholarly record.** *Yes, for this program ensuring faculty have experience interacting with industry will be important.*

The relative balance of teaching and professorial stream faculty members and their technical discipline will be adjusted as necessary as the program is rolled out to ensure the necessary teaching resources and relevant expertise. Technical fields for the professorial appointments are also influenced by research priorities for the Markham campus, and ongoing relationship building will take place with Markham industry partners.

- **Evidence that there are adequate resources (e.g. library, laboratory, studio space, equipment) to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities.** *Yes, however ensuring that the industry partners have adequate resources to support the students learning will be an important additional consideration given the unique nature of this program.*

We imagine that the new Business Development (BD) Manager will play a critical role in supporting both the learners and the employers. The BD Manager will lead the employer outreach and recruitment process. Relationships with employers are crucial. This role is a client manager and has close relationships with Early Talent Managers and HR teams of employer partners and prospective partners. The BD Manager is the point of contact to market the program to prospective employers. The BD manager will need to set up processes to ensure that the learners are employed.

- **Evidence of and planning for adequate numbers and quality of: (a) faculty and staff to achieve the goals of the program; or (b) of plans and the commitment to provide the necessary resources in step with the implementation of the program; (c) planned/anticipated class sizes; (d) provision of supervision of experiential learning opportunities (if required); and (e) the role of adjunct and contract faculty.** *Mention has been made of the need to identify WIL staff resources and the student tutor resources.*

As mentioned above, we have updated the program brief to capture the wider breadth of resources planned for the successful delivery of this program. This includes a Business Development Manager, Educational Developer, Educational Technologist, amongst others charged with supporting the overall student experience.

<u>Quality of Student Experience</u>

- **Is the evidence of a program structure and faculty research that will ensure the intellectual quality of the student experience?** *Yes, however care needs to be taken in balancing the demands of the industry partners and those of the academic unit. Industry partners need to be prepared to engage as educational partners providing the resources required for the assignments and projects, supportive assessment and feedback and space for meaningful reflection. When partnering with industry in this way there need to be policies and practices in place that ultimately protect the student from the power dynamic of being between two sets of demands. How is the student's degree progression protected if they become unemployed? Finally, while deep learning can happen in the situation where the learner remains with one industry partner throughout their degree, there is significant benefit in being able to experience more than one organization. Consideration might be given to building in a term where students work for a different industry partner – this provides more*

opportunity for the students to transfer their learning to other contexts (very important for the future of work) and to build their networks (very important for career success).

As mentioned in the program brief, the program will be supported and supplemented by a suite of academic success supports and services that contribute to the quality of the program and the success of students. They include academic advising, accessibility services, general learning skills (e.g., time management, critical thinking, reading and note-taking), discipline specific supports (e.g., writing and numeracy skills), and peer-based learning supports such as peer tutoring and Supplemental Instruction. Students' sense of belonging and community within their program is strengthened through a robust first year orientation and transition program, the active involvement of peer mentors, and a program specific student club/organization. To round out the student experience, students will have access to both in-person and remote student services delivered by staff based at Markham and Keele campuses. Holistic student services include registrarial services, student finances and bursaries, health and wellness support and programs, and student activities and involvement programs.

Ongoing engagement with employers requires significant support, as it relates specifically to student-facing and academic matters. In addition, onboarding of employers will require due diligence with respect to their capacity not only to provide learning opportunities but also to support students in numerous ways, including through internal practices for supporting employees through potential conflict, harassment and other difficulties. We envisage developing a legal contract articulating the relationship and expectations between the university, employer and student. We expect that such a contract would also clarify issues such as confidentiality and intellectual property. This will not replace the normal employment contract.

Appendix A: Mapping of Courses to Program Learning Outcomes

I… introductory

D…developed

P…proficient

Course Code	Cr	Course Title	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
DIGT 1110	2	Professional Foundations: Teamwork and Communication					I	I	I		
DIGT1120	4	Introduction to Computational Thinking		I			I		I	I	I
MATH 1150	3	General Mathematics for Software Development						I		I	
XXXX YYYY	3	Organisations: Structure and Processes	I	I	I			I	I		
DIGT 1210	1	Professional Foundations: Workplace Reflection I	I	I			I	I	I		
DIGT 1220	8	Object-Oriented Problem Solving		I			I	I	I	I	I
DIGT 1320	3	Net-centric Computing	I	I			I	I	I	I	I
XXXX YYYY	3	Being a Digital Citizen						I	I		
XXXX YYYY	3	Animating a Digital Citizenry						I	I		
DIGT 2110	1	Workplace Reflection II	D				D	D	D		
DIGT 2120	4	Systems Programming		I				I		I	I
DIGT 2130	8	Data Structures, Algorithms and Analysis	I	D				D	I	D	D
DIGT 2121	3	Practice of Software Development	I	D			I	D		D	D
DIGT 2210	3	Operating Systems		D	I			D		D	D
DIGT 2230	3	Communication and Network Fundamentals	I	D	I			D		D	D
DIGT 2330	3	Security Fundamentals	I		D			D			
DIGT 2340	3	Introduction to Data Management		D	I	I				D	D
		Common 3000-level:									
DIGT 3100	9	Digital Technologies project	D	D			D	D	D	D	D
DIGT 3120	3	Software Development Lifecycle		D						D	D
DIGT 3130	3	Security and Privacy: Awareness and Governance	D		D		D	D	D		D
DIGT 3140	3	Introduction to Data Analytics	D	D		D		D		D	D
DIGT 3230	3	Software Security	D	D	D			D		D	D
XXXX yyyy	3	Introduction to Project Management	D	D		D	D			D	D
		Software Development Specialisation:									
DIGT 3121	3	Software Development I	D	D						D	D
DIGT 3220	3	Software Development II	D	D						D	D
		Security Specialisation:									
DIGT 3131	3	Network Security	D		D			D		D	
DIGT 3231	3	Basics of Cryptography	D		P			D	D	D	D
		Data Science Specialisation:									
DIGT 3141	3	Database Systems				D				D	D
DIGT 3240	3	Data Acquisition and Governance	D			D		D	D		
		Common 4000-level:									
DIGT 4110	3	Machine Learning: Foundations							D	P	
DIGT 4112	3	Machine Learning: Applications	P	P				P		P	
DIGT 4210	3	Cloud computing: infrastructure and software	P			P					P
Course Code	**Cr**	**Course Title**	**PLO1**	**PLO2**	**PLO3**	**PLO4**	**PLO5**	**PLO6**	**PLO7**	**PLO8**	**PLO9**
DIGT 4113	3	User driven development	P	P			P		P	P	P

		Software Development Specialisation:									
DIGT 4121	3	Software development: Requirements	P	P						P	P
DIGT 4220	3	Software development: Architectures and Metrics	P	P						P	P
DIGT 4122	3	Software development: Testing		P						P	P
DIGT 4120	9	Software Development Synoptic Project	P	P			P	P	P	P	P
		Security Specialisation:									
DIGT 4131	3	System Security: Architecture and Engineering	P		P					P	P
DIGT 4230	3	System Security: Trust, Identity and Access	P		P					P	P
DIGT 4132	3	System Security: Detection, Response, Recovery	P		P					P	P
DIGT 4130	9	Security Synoptic Project	P		P		P	P	P	P	P
		Data Science Specialisation:									
DIGT 4141	3	Data Storage and Retrieval	P			P				P	P
DIGT 4240	3	Data Mining	P			P				P	
DIGT 4142	3	Data Analysis and Presentation	P			P				P	
DIGT 4140	9	Data Science Synoptic Project	P			P	P	P	P	P	P

DIVISION OF STUDENTS

Office of the University Registrar

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University Registrar

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November 30, 2021

To: Academic Standards, Curriculum and Pedagogy Committee

RE: Proposal for Bachelor of Applied Science in Digital Technologies

The proposal for the Bachelor of Applied Science (BASc) in Digital Technologies at the Markham Campus has been reviewed by the Office of the University Registrar.

We support this innovative proposal and look forward to working collaboratively with the Lassonde School of Engineering on the implementation details in support of their requirements.

Sincerely,

Darran A. Fernandez, M.Ed.
University Registrar
York University

YORK UNIVERSITY LIBRARIES

Office of the Dean

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Memorandum

To: Peter Cribb

From: Joy Kirchner, Dean of Libraries

Date: October 13, 2021

Subject: BASc Honours in Digital Technologies Program Library Support

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York University Libraries (YUL) is strongly positioned to support the curriculum and research needs of students and faculty in the proposed BASc Honours in Digital Technologies program at York University's Markham Campus. As noted in the Statement of Library Support, YUL provides access to an extensive array of resources and services that support work integrated learning (WIL) for students and faculty in this program. I draw your attention to the new Markham Campus Centre Library (MCCL) spaces that will provide immersive, technology enhanced spaces that lends itself well to your program. I also highlight YUL's curriculum integration offerings, digital literacy programs, data management and data visualization offerings and other specialized programming offered through our digital scholarship centre.

We look forward to contributing to the success of preparing career-ready graduates of the BASc Honours in Digital Technologies program at the Markham Campus of York University.

cc: Patti Ryan, Director, Content Development and Analysis,
Jack Leong, Associate Dean of Libraries, Research and Open Scholarship
Andrea Kosavic, Associate Dean of Libraries, Digital Engagement and Strategy

BASc Honours in Digital Technologies
Library Statement of Support

October 2021

This statement of library support for the proposed BASc Honours in Digital Technologies has been prepared in accordance with the guidelines outlined in the Quality Assurance Framework as set out by the Ontario Universities Council on Quality Assurance. It describes some of the services and levels of support that York University Libraries (YUL) will be able to provide to students and faculty at the Markham Centre Campus. YUL supports all programs through immersive spaces, diverse collections, instructional services, research assistance, access to knowledge resources, expertise with research dissemination and adaptive services.

This new BASc Honours in Digital Technologies program provides academic and research opportunities in line with the Markham Campus' focus on technology, entrepreneurship, management and communications. York University Libraries embraces this approach with Markham Centre Campus Library (MCCL) programs and services that support multimodal learning through program-integrated offerings of technology, space and expertise. MCCL embeds library instruction and proficiency with immersive spaces including media capture and editing suites, a makerspace, VR capabilities, a gaming lab, and a visualization wall, all developed to support creative collaborations for teaching, learning, research and community partnerships. From a rich and diverse collection of print and electronic resources and tools, to one-on-one consultation services, instructional sessions, co-curricular offerings and group study spaces, the Libraries are well-positioned to support student success in what promises to be a rich, intensive program of study.

An overview of relevant York University Libraries services and resources for students and faculty is provided in subsequent sections.

Library Curriculum Integration for BASc Honours in Digital Technologies

Information Literacy (IL) encompasses the skills to find, retrieve, evaluate, use and produce academic, professional and creative work. It enables students to participate fully in a university environment and a disciplinary culture. IL integration strengthens alignment with Degree Level Expectations and the seven defined categories of broad knowledge and skills integral to Ontario's Quality Assurance Framework.

Scaffolding IL instruction is most effective when organized at the program level as it eliminates duplication, improves assignment outcomes, and enables students to apply their learning. IL instruction spans many areas including digital methods, digital tools, data visualization, copyright, privacy and security. Based on ACRL's Framework for IL for Higher Education, and years of experience, we suggest integrating library instruction into the introduction to the discipline course XXXX YYYY 3.0 Being a Digital

Citizen, the software methodologies course DIGT 3120 Software Development Methodologies and the project course DIGT 41Y0 9.0 Software/Security/Data Science Project.

Instructors are encouraged to take advantage of dedicated, in-class sessions that can be tailored to course material or assignments. A wide range of programming is available, including digital and information literacy, blended learning modules, co-curricular programming, open educational resources and student seminars. Students in data science programs may benefit from dedicated, in-class workshops related to developing and implementing search strategies, tracking and correctly citing data sources, and managing collections of reference materials and citations. In-class sessions should be organized and booked in advance of each semester's offerings, and requests can be submitted at https://classrequests.library.yorku.ca/

Digital Scholarship Centre and Specialized Programming

To discuss curriculum integration in the areas of digital scholarship, digital cultures and pedagogy, data management, open education, or scholarly publishing, YUL welcomes faculty to contact the Digital Scholarship Centre. The Digital Scholarship Centre (DSC) at York University Libraries houses knowledge in a range of digital tools and methods for web crawling and scraping, data cleaning, data curation, text processing and analytics, social graph analysis, data visualization, and linked open data applications, with an emphasis on sustainable, low-barrier approaches and open-source tools. The Digital Scholarship Centre draws expertise from a variety of departments within York University Libraries. The Digital Scholarship Infrastructure (DSI) supports students and faculty seeking assistance with digital scholarship and digital humanities projects, open repositories, digitization best practices, digital preservation, research project design, eLearning, and Open Educational Resources. The department also hosts a data services team that can provide guidance on how to find and evaluate aggregated data and microdata sources for research projects as well as on how to document, publish, and preserve research data objects.

Immersive Spaces at Markham Centre Campus Library

The **Media Creation Spaces at MCCL** offer equitable access to library expertise and media creation spaces including audio and video recording equipment, audio-visual media creation spaces and editing suites, portable virtual reality headsets, and workstations for hands-on digital media production work. The Digital Scholarship Centre offers resources for faculty members seeking to integrate audio- and video-based assignments and activities into their courses and enables media literacy skills development in support of coursework and capstone projects.

The **Makerspace at MCCL** is a site for critical making, offering a research and learning environment where students and researchers have access to 3D printers, electronic textiles, sewing machines, electronics and robotics. This large space is configured as a teaching environment and can accommodate in-class learning. Library makerspace programming fosters key digital, social, and cross-disciplinary fluencies such as critical and creative thinking, research skills, project planning and management,

professional communication, the ability to work in multidisciplinary teams, and adaptability to new contexts and circumstances.

The **Visualization Wall, Gaming Lab and Virtual Reality (VR) Lab** are in a single dynamic, configurable space, with the Visualization Wall augmenting VR and gaming experiences. The Visualization Wall, with a massive viewable area of 28 x 14 feet, allows for enhanced research and teaching applications such as the visualization of large data sets, engagement with sophisticated software platforms, and detailed viewing and modelling of complex structures. The gaming capabilities of the space are leveraged to factor in backwards compatibility for legacy equipment for instructors and allow multiple users to concurrently engage with the visualization wall in a variety of configurations.

Library Resources

York University Libraries have robust and multidisciplinary collections that are responsive to emerging curriculum and research needs. We have adopted an “e-preferred” approach for new content, meaning that any requests for new titles will be fulfilled with e-book purchases whenever available or affordable, and with as few access restrictions as publishers will allow.

Print materials relevant to the programs can also be found via OMNI, and York community members can arrange to have materials held at any of our libraries. Aside from York’s collection, our partnership with the OMNI network provides students and faculty members with access to print materials housed at any of our 14 partner institutions across Ontario.

Relevant Databases, Indexes, and Data Sources

Many of the courses in the program will focus on diverse topics of computer science, in particular software development, cybersecurity and data science. To inform their work, students will require access to technical books and manuals, scholarly journal and conference articles, software standards among other types of documents. The breadth of the program spans many disciplines, all of which can be addressed with elements of the York University Libraries collections.

The Libraries provide access to hundreds of thousands of journals, the vast majority of which are accessible online. Articles are discoverable through the Omni library catalogue or through the Libraries' extensive set of article databases such as IEEE Xplore and The ACM Digital Library among others. Students in the BASc Honours in Digital Technologies programs will also benefit from a range of more domain-specific tools and platforms including Access Engineering and INSPEC.

Program-Related Research Guides

York University Libraries publishes research guides related to disciplines and topics addressed by York programs. Librarians can also create customized research guides to help with individual courses or assignments, usually as part of an IL session as described above. Existing guides of interest to this program are:

Computer Science: https://researchguides.library.yorku.ca/cse

Last updated: 21/01/2020

Data and Statistics: https://researchguides.library.yorku.ca/data
Library Data Services: https://researchguides.library.yorku.ca/dataservices
Science and Technology Studies: https://researchguides.library.yorku.ca/sts
Mathematics: https://researchguides.library.yorku.ca/sts
Digital Scholarship and Digital Humanities: https://researchguides.library.yorku.ca/dsdh

Email, Chat, and Consultation Services

In-person assistance with research, citation and other information is readily available from York University Libraries. Currently, online support is available through text messaging, email or through our online chat or drop-in zoom service. Students in this program may also take advantage of our consultation service, where individuals or groups meet with a librarian to discuss specific assignment- or research-related questions or any other topic. These consultations are available at regular hours throughout the week, and can be booked online at https://www.library.yorku.ca/web/ask-services/book-a-consultation-with-a-librarian/

Conclusion

York University Libraries is well positioned to support the curriculum and research needs of students and faculty in the proposed BASc Honours in Digital Technologies Program at York University. Our external partnerships and collaborative collection building initiatives with other universities have positioned YUL to support the emerging needs of the students and faculty of this program in the ever-changing and complex scholarly communications landscape. Our external partnerships and collaborative, multi-institutional collection building and the many programs and services mentioned above will contribute to the success of this new program in the years to come.

Last updated: 21/01/2020

LASSONDE SCHOOL OF ENGINEERING | YORK UNIVERSITÉ UNIVERSITY

OFFICE OF THE DEAN
Suite 204 · Bergeron Centre for Engineering Excellence
4700 Keele Street · Toronto · Canada · M3J 1P3

MEMO

TO: Lyndon Martin, Vice-Provost Academic

FROM: Dan Palermo, Vice Dean, Lassonde School of Engineering

CC: Peter Cribb, Professor Emeritus, Lassonde School of Engineering
Richard Hornsey, Chair, Department of Electrical Engineering & Computer Science
Jane Goodyer, Dean, Lassonde School of Engineering
Alice Pitt, Senior Advisor, Markham Academic Strategic Planning

SUBJECT: Statement of Support for Bachelor of Applied Science in Digital Technologies

DATE: October 29, 2021

Given the Dean's involvement in supporting the development of this program, the revised statement of support has been delegated to myself in my role as Vice Dean. I am pleased to express our continued support for the new programming our Lassonde School of Engineering has planned for the Markham Campus to launch in fall of 2023. The new Bachelor of Applied Science (BASc) in Digital Technologies is unique in the Canadian university landscape and is an excellent opportunity to differentiate not only the Lassonde School of Engineering, but also York University across this system. As mentioned in the program brief, the Digital Technologies program employs a work integrated learning (WIL) model which requires collaboration with employers to ensure the students achieve the program's learning outcomes. Students are expected to achieve these program learning outcomes through a combination of experiential learning at their workplace, and by attending Markham Campus at least 20% of their time.

As the Dean previously articulated, the delivery of this program is in line with York University's strategic priorities with a commitment to the Markham community in providing increased access to talent to address the skills shortage in the ICT sector. This program also provides a new route for those who may not otherwise consider a university education. As these students are employed full-time and paid a competitive salary whilst learning; this may mitigate the systemic financial barriers and allow increased social mobility to underrepresented groups, which is a key theme in Lassonde's Academic Plan 2021-26.

In Lassonde, we are building a faculty complement plan with 24 dedicated faculty positions to complement the Department of Electrical Engineering and Computer Science, which includes teaching stream and professorial stream faculty hires. We anticipate steady-state enrolments of ~400 students in each of our new Digital Technologies and Computer Science for Software Development programs proposed by this department for delivery at Markham. As both programs

are highly complementary in their discipline's body of knowledge these 24 faculty positions will be able to ensure these students have access to their expertise and the latest research. Lassonde will participate in a suite of shared administrative supports that are planned for the delivery of all Lassonde programs to launch in fall 2023 at the Markham Campus. This will include dedicated supports for program delivery, work integrated learning, technical staff, operations and advising. Student supports will be provided via a combination of Lassonde staff, along with shared centralized Markham Campus student services staff. Libraries, information technology, counselling, career services, and more, will be available and provided for students through a shared-service delivery model similar to the structure that is provided on the Keele Campus. In addition, due to the high degree of work integrated learning that occurs at the employer, we are committing to offering more specialised support. A Skills Coach role, who acts as a personal learning skills tutor, is crucial to ensure that we maintain a relationship with the student and their employer in order to support and track their progress with courses and the attainment of the program learning outcomes. A Business Development role, who engages with employers to promote the program, help them recruit a suitable candidate (student) and broker a triparty agreement between the employer, student and university.

YORK
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FACULTY OF SCIENCE

Office of the Dean

Michael Scheid
Associate Dean Students

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November 1, 2021

Dr. Dan Palermo
Vice Dean, Lassonde School of Engineering
York University

Dear Dr. Palermo,

Re: Support for Bachelor of Applied Science (BASc) Honours in Digital Technologies

I have reviewed the Bachelor of Applied Science (BASc) in Digital Technologies. I can confirm that we will have the necessary faculty complement in place at Markham Center Campus to provide teaching support for this program - MATH1150 3.0 – General Math for Software Developers. In addition, we will also provide embedded Math teaching (2.00 credits) for the following courses - DIGT1220 8.0 – Object Oriented Problem Solving; DIGT2130 8.0 – Data Structures, Algorithms and Analysis.

We are excited to contribute to this innovative program and are looking forward to collaborating with Lassonde at Markham Campus.

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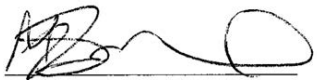
Kindest regards,



Michael Scheid, Associate Dean, Students

YORK
UNIVERSITÉ
UNIVERSITY

OFFICE OF THE PROVOST & VICE-PRESIDENT ACADEMIC

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T 416 736 5280

Memorandum

To: Martin Bunch, Chair, ASCP

From: Lisa Philipps, Provost & Vice-President Academic

Date: October 27, 2021

Subject: BASc Honours in Digital Technologies program

I have reviewed the materials for the proposed Bachelor of Applied Science Honours program in Digital Technologies. This memo signals my strong support for this innovative program which will complement the strength of existing offerings in the Lassonde School of Engineering and York University. This new program is strongly aligned with the University's Academic Plan in its view toward experiential and professional learning, and in its focus on problem solving skills and collaboration across disciplines.

Initial programs developed for York's Markham Campus focus on new technologies and entrepreneurship, and how these are informing and changing many fields of knowledge and professional life. Strong research and academic support for students is offered by York University Libraries, and all facilities have been designed in collaboration with participating Faculties, programs and service units.

I am particularly excited to offer my endorsement of the proposed work-integrated learning (WIL) Bachelor of Applied Science Honours degree in Digital Technologies, offered through Lassonde School of Engineering's Department of Electrical Engineering and Computer Science. This program is highly distinctive, addressing identified need within the sector, within the Markham community, and clearly reflecting the University Academic Plan's concerns for 21st Century Learning and Working in Partnership.

I have reviewed the enrolment projections and am persuaded that the resource demands to launch this program are both appropriate and accounted for in the current proposal and can be served by our current and future faculty and staffing plans for the Markham Campus. This program will be unique in Ontario and will draw upon practice-based and scholarly expertise that York University is more than capable of delivering.

In developing this program, we have benefitted enormously from close study of Manchester Metropolitan University's BSc in Digital and Technology Solutions, which modeled for us the clear benefit of work-integrated learning in which students learn in the workplace as well as in the classroom. Using this form of industry collaboration, the BASc in Digital Technologies will provide non-traditional pathways to access higher education and careers in a thriving technology sector. Indeed, extensive collaboration with industry experts has helped set the occupational standard from which the program objectives have been determined. Approximately 80% of program learning outcomes for the Digital Technologies BASc will come through experiential learning in the workplace, and the balance will come through academic delivery modules.

With an anticipated intake of 100 students per year, this program will offer students a set of shared core courses and three possible areas of specialization: software development, cybersecurity, and data science, with the possibility of further specializations being added in the future. Making use of existing expertise within Lassonde School of Engineering, this program in no way replicates existing offerings at York within Engineering or elsewhere. It is grounded in engineering knowledge, teaching technical and skills-based learning alongside the organizational behaviour that is essential to work in the sector, and offers students the multi-, inter- and transdisciplinary education that is a cornerstone of our Markham Campus offerings to produce globally-educated and highly employable citizens.

This program has been developed collegially and with the strong support of the Dean of the Lassonde School of Engineering, whose letter is included in this package. Students at the Markham Campus will be supported with a full suite of academic resources and administrative supports through a combination of on-site faculty, staff and other resources, and access to the full range of existing facilities at York's Keele and Glendon campuses. York University is committed to growing resources as the Markham Campus grows, ensuring that faculty and staff hires, lab spaces, access to experiential education and other necessary supports keep pace with student and campus demand.

We are pleased to already be working in partnership with employers in York Region and beyond, including GM, Siemens, Ceridian and others, to ensure hands-on, work-integrated learning opportunities in which students will achieve many of their program learning outcomes. We are proud that this program, designed on the example of a highly successful international model, is ground breaking in Canada. The BASc in Digital Technologies mobilizes the strengths of our new campus location and local relationships to produce graduates who can be leaders and critical thinkers in the new digital economy.

On October 8, 2019, York University's Board of Governors approved the business plan for the University's new Markham Campus, situated in the heart of York Region, one of the fastest growing regions in Ontario. Following a rigorous planning process and the commitment of financial and in-kind resources from the City of Markham, York Regional Council and York University, construction began on the new campus in summer 2020 and is on track for completion in time to welcome students in September 2023.

The Markham Campus building is a $275.5m project, designed by internationally celebrated architecture firm Diamond Schmitt, that will accommodate up to 4,200 students in 400,000 square feet of light-filled space, with the potential to expand student capacity at the campus over time for as many as 10,000 students. The University's Board has approved a ten-year budget based on current enrolment projections, and the Ontario government has agreed to fund domestic student spaces.

Staffing for the campus is ramping up, with key positions in place, and additional faculty and staff hires following. Seventeen faculty dedicated to Markham programming have already been hired, with a further 16 searches have been authorized by the Provost for start in 2022, with more authorizations planned for future hiring cycles. The Deputy Provost for Markham Campus will report to both the Provost and the President of the University, and will collaborate actively with Deans of Faculties present at the campus. Key senior staff roles – in Student Services and Advancement, for example – will oversee other aspects of campus management and operations. The Executive Director and Deputy Provost together are responsible for the administrative and academic operations of the campus, and will participate in the hiring of staff and development of planning and operational committees with the Faculties offering programs onsite. In all cases, thorough searches are being undertaken to locate highly-qualified and diverse candidates who will bring excellence and expertise to this initiative.

The location of this campus is bringing York University to the downtown core of Markham, reaching out to students in this fast-growing community where they are. Markham Campus is a purpose-built facility that will offer all the support future students will need to achieve success in their programs of study. In addition, Markham students will be able to access all York University offerings and facilities at both its Keele and Glendon campuses, including undergraduate courses and offerings that can satisfy degree requirements outside of the major area of study.

I look forward to receiving the reviewer's reports and to submitting the final proposals for approval to Senate, Quality Council and the Ministry of Colleges and Universities in due course.

Voice: (613) 791-2222
Email: clacroix@ca.ibm.com

3755 Riverside Drive
Ottawa, Ontario K1G 4K9

October 14, 2021

To Whom It May Concern,

On behalf of IBM Canada, I would like to extend our support and endorsement of Lassonde School of Engineering at York University's dynamic proposal to launch a unique Bachelor of Applied Science in Digital Technologies program. This Integrated Program is based on a fully work integrated degree learning model that has been adopted in the UK and IBM is one of the members. One of the well-known institutions is The Manchester Metropolitan University, where learners are permanent full-time employment in industry such as IBM. These are considered IBM employees for the duration of the program which varies such as a 3 or 4 year program term. The benefit of this program and the students are fully integrated in industry and contribute directly to the organization and received a true applied experience.

Given this concurrent learning and working model's success in attracting quality digital technology talent in England, we anticipate it will also address the shortage of advanced skills and knowledge we face here in Canada. At IBM, we believe our strength lies in the diversity of our employees. This program aims to increase participation from underrepresented groups by eliminating financial barriers for learners who will all earn a salary and have their tuition fees covered.

We have a close relationship with Lassonde and York University, which we've cultivated over many years through various collaborations. In 2020, Lassonde Professor Marin Litoiu was presented with IBM Center for Advanced Studies' Faculty of the Year award for his role in shaping the Center and applying his AI and machine learning research to deliver innovation. IBM Canada has also been represented on Lassonde's Electrical Engineering & Computer Science advisory board since its inception. And, we have a visiting research scientist who is currently collaborating with Lassonde researchers, and another who joined the school as a professor.

At York University, IBM's Watson platform was used to collaboratively build SAVY, a software-based virtual assistant, which provides students with general information via their mobile phone or online 24/7/365. In addition, IBM Spectrum Computing worked with Lassonde, through the Big Data Research, Analytics, and Information Network (BRAIN) Alliance, to develop faster big data solutions and innovative applications to help IBM maintain a competitive role in this sector.

Lassonde's new BASc in Digital Technologies program promises to take our connections with the school's graduate and undergraduate Computer Science program, researchers, and faculty to the next level. As one of Lassonde's Trailblazer partners in co-developing the Program Standards, we were able to pinpoint technical skills and knowledge that are so difficult to find. IBM's greatest invention is the IBMer so it's important for us to not only attract fresh ideas and skills, but also retain talent by empowering employees who would like to upgrade their knowledge while earning a degree.

We hope you're as enthusiastic as we are about Lassonde's proposal to introduce this extraordinary first for Canada, and a proven model at IBM UK. If there's any information from IBM that would be of assistance, please let me know.

Thank you,

Sincerely,

Colette Lacroix
Industry Executive Higher Education and Research
CanadaIBM Canada

October 29, 2021

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WWW.SHOPIFY.COM

To Whom It May Concern,

As you may be aware, Lassonde School of Engineering at York University is working towards introducing Canada's first Integrated Program: A Bachelor of Applied Science in Digital Technologies. Learners will be employed full-time and paid a salary by their employer throughout the four years of the program.

For Shopify, this is very exciting and an important next step in the evolution of our Dev Degree, which we've offered in partnership with Lassonde since 2018. Our students earn 4,500+ hours of paid work experience, splitting their time equally between Shopify and their coursework at Lassonde. The introduction of the BASc in Digital Technologies will raise the bar once again with significantly more work integrated learning time.

We're very happy with the quality of education our Dev Degree students receive through Lassonde, and this is evident in the large number of graduates we hire permanently. So, when Lassonde approached us to co-develop the undergraduate degree Program Standards for their new BASc in Digital Technologies program, we jumped at the opportunity to help inform the technical skills, knowledge, and behaviours we need in graduates.

As the ICT sector struggles with inclusivity, we actively seek to improve diversity by removing systemic barriers such as cost. We want to provide access and opportunities for youth from the GTA, especially from underrepresented communities. The Integrated Program will allow us to do just that by providing an alternative degree pathway for graduating high school students who may not have otherwise considered postsecondary education. Or, for existing employees who wish to build skills, improve their theoretical understanding, and earn a degree qualification.

Since 2006, Shopify has grown to 7,000 employees, building tools to help merchants generate over 200 billion in sales in 175 countries. We need students of the BASc in Digital Technologies program to join our team, designing and building new digital tools that will resonate with the next generation of merchants to shape the future of e-commerce on a global scale. They'll be solving cutting edge problems of growth, scale, and usability.

Shopify, like most large businesses across Canada, is urgently looking for ways to address the digital skills shortage, and we believe this Integrated Program is the solution to nurture a pipeline of highly qualified talent. Both students and graduates will significantly support the digital economy across Canada as cybersecurity analysts, software developers, information management specialists, application developers, data scientists, and systems designers.

We encourage you to please join us in supporting Lassonde's BASc in Digital Technologies program, the start of a revolutionary new learning model, designed to benefit employers, students, and society. Thank you in advance for your consideration, and please let me know if you would like to learn more about the success of our Dev Degree in building Shopify talent.
Sincerely,

Alison Evans Adnani

Alison Evans Adnani
Senior Program Lead, Dev Degree

October 8th, 2021

To Whom It May Concern:

On behalf of Mitacs, we are pleased to provide a letter of support for Lassonde School of Engineering's BASc in Digital Technology (Integrated Programs), which aims to address industry needs for career-ready graduates in the field of digital technologies. The proposed degree program is based on a fully intensive work-integrated-learning (WIL) model, that requires participating students to learn towards earning a Degree while working full time with a specific employer in relevant highly skilled roles in Digital Technologies sector.

We are partnering with Lassonde School of Engineering to build an understanding of this model, how it will be implemented, and scalability of this model. We have developed an understanding of how the program is being developed. The most innovative thing about is program is the method of delivery where a learner, while pursuing a university degree, is also working, earning and continuously developing their skills.

Mitacs is a national not-for-profit organization offering innovative training & research programs. In collaboration with industrial and academic partners, Mitacs is developing the next generation of innovators and business leaders with vital scientific and business skills. As such, Mitacs recognizes that Lassonde School of Engineering's BASc in Digital Technology has the potential to set the stage for a revolutionary new learning model. This is the type of learning model which also aligns to the strategy of Mitacs, focused on experiential and work-integrated-learning. We would like to partner with Lassonde School of Engineering and York University to understand the learnings from this model and the possibility to take it to other higher education learning settings.

Mitacs also recognizes the imminent need to increase highly skilled talent pools for the digital technologies sector, and this program is presenting a step in the right direction. Through Mitacs Accelerate & Elevate programs, which support graduate and post-doctoral research internships with industry, Mitacs can further support the Lassonde School of Engineering's vision of developing more effective partnerships between employers, responsive higher education, and the Governments.

We look forward to support Lassonde School of Engineering's plans to successfully launch the Integrated Programs in Digital Technology.

Sincerely,

Ridha Ben Mrad, PhD
Chief Research Officer
Mitacs

Thanks to our funding partners.

Canada
Alberta
British Columbia
Research Manitoba
New Brunswick
Newfoundland Labrador
Nova Scotia
Ontario
innovationpei
Québec
Saskatchewan
Yukon

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October 6, 2021

York University / Lassonde School of Engineering

Attn: Parag Jain, MBA, PMP, Manager, Strategic Initiatives

Re: EY Letter of Support – BASc in Digital Technologies (Work Integrated Learning)

Jane Goodyer, Dean, Lassonde School of Engineering:

EY is proud to provide a letter of support for Lassonde School of Engineering's BASc in Digital Technology (Integrated Programs), which aims to address industry needs for career-ready graduates in the field of digital technologies. The proposed degree program is based on a fully intensive work integrated learning (WIL) model, that requires participating students to learn towards earning a Degree while working with EY.

As a Trailblazer partner who has worked closely with Lassonde School of Engineering to co-develop the undergraduate degree Program Standards (Outcomes expected from graduating students in terms of Technical knowledge, Technical skills, and behaviours) we believe the program is the start of something very special. It sets the stage for a revolutionary new learning model, designed to benefit employers, students, and society.

The speed of change in the technology sector, further fueled by the COVID-19 pandemic has produced a new wave of automation and exacerbated the digital skills shortage, so the need for such talent is right now, rather than years into the future. Graduates of this program will be in high demand as cybersecurity analysts, software developers, information management specialists, application developers, data scientists, and systems designers.

Without adequate highly skilled talent in disruptive emerging technologies, it becomes a challenge for EY to continuously innovate, disrupt and stay as a leader in technology consulting and cybersecurity services.

There is an urgent need to reduce the skill gap by developing a partnership between employers, responsive higher education and this program and new type of learning model can be game-changing for the Canadian ICT sector.

As enthusiastic beneficiaries and advocates of Integrated Programs, we look forward to support Lassonde School of Engineering's plans to successfully launch the Integrated Programs in Digital Technology.

Yours truly,

Bryan Pollitt
Associate Partner, Cybersecurity Services

416-941-3043
Bryan.Pollitt@ca.ey.com

530 Adelaide St. West
Unit# 6117
Toronto, Ontario
M5V 1T5

October 29, 2021

To Whom It May Concern,

In the last several years since co-founding Cinchy Inc., a data collaboration platform, recruiting top-tier tech talent has been instrumental in our company's success. To continue growing, and help take our business to the next level, we need access to the best and brightest computer science minds, including leading edge researchers.

Lassonde School of Engineering at York University is developing the knowledge and people who will create next generation data solutions that increase our customers' and partners' agility and IT capacity. Like Cinchy, Lassonde is reimagining traditional models to address business needs, and I'm confident their new approach to learning and employment will push Canada forward.
The school's proposed Integrated Degree Program, Canada's first, is a Bachelor of Applied Science in Digital Technologies. It offers a uniquely flexible alternative to traditional university study where a learner works full time with 20 percent of their working hours dedicated to studying for the degree and gaining related off-the-job training.

As one of Lassonde's Trailblazer partners, Cinchy has had the pleasure of co-developing the BASc in Digital Technologies Program Standards, including identifying the knowledge and technical skills expected of graduating students. This rigorous process, which involved more than two dozen partners, ranging in size and sector, will ensure Lassonde is preparing graduates who are highly competent experts in software development, cyber security, and data science.
By removing financial barriers for learners, companies will be able to recruit a more diverse talent base, which is so important from an equity and inclusion lens. One of the many advantages to this program is that learners will be both current employees and newly recruited employees, including recent high school graduates. They'll start with an intensive programming bootcamp, including professional skills development, so they can hit the ground running.

We believe this Integrated Program in Digital Technologies will be a gamechanger for the Canadian ICT sector in terms of growing talent, closing the skills gap, and bringing the latest knowledge to businesses like Cinchy. We strongly advocate for the program as a much-needed degree and education model for more intensive, rewarding work integrated learning.
Thank you in advance for considering this exciting new opportunity to support skills development in digital technologies, and please don't hesitate to get in touch with any questions.

Karanjot Jaswal
CTO/Co-founder

cinchy.com
1-844-424-6249

TITLE	Letter of Support
FILE NAME	Cinchy Inc.docx
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mimik Technology Inc.
1250 – A Fairmont Drive, 609
San Leandro, CA 94578 USA

November 12th, 2021

To Whom It May Concern,

As the Founder and CEO of mimik Technology Inc., a Hybrid edgeCloud company, I am committed to building a highly skilled digital technology team for developing new solutions and designing innovative products and services that push our customers and partners forward.

At mimik, we genuinely believe in safeguarding people's data and are convinced data would be the fuel for the next industrial revolution. Data piracy and robbery is a significant problem we are facing today. In order to develop an innovative and scalable solution, we need top talent to navigate and advance our complex high data privacy and security environment. However, recruiting competent and skilled software developers, information management specialists, cybersecurity analysts, data scientists, and systems designers and architects is a significant challenge for most technology companies.

The digital skills shortage and the gap between post-secondary education and the industry needs are the main reasons that led us to collaborate with Lassonde School of Engineering at York University, an innovative community of computer scientists, engineers, and entrepreneurs. They have created an exciting new Bachelor of Applied Science in Digital Technologies degree, the program standards we helped co-develop as one of their Trailblazer partners.

In this integrated program, designed to supercharge skills development, learners will be paid by their host employer, such as mimik, to work in a full-time job, with 20 percent of their time allocated to in-class theoretical studies at Lassonde's Markham Campus. We see this type of integrated degree model, a first in Canada, as one that would potentially get scaled up across the country through other institutions.

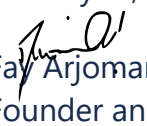
By providing an alternative route to conventional university study for both high school graduates and existing employees, the program can produce more technology solutions professionals who have the work-based skills, knowledge, and experience required to develop, protect, and improve technology solutions and services.

As a female technology leader who has overcome numerous obstacles to succeed in a male-dominated ICT sector, I am passionate about furthering STEM careers for women, particularly those who are underrepresented. Lassonde's BASc in Digital Technologies program aligns well

with our company's inclusive values by alleviating learners from the burden of taking on debt, which might have otherwise deterred them from pursuing a university degree.

To continue to succeed in edge computing, a massive market that's just starting to take off, we need to attract a diverse, integrated workforce through cooperative, reciprocal connections with research and academia. Together, we can build a more highly skilled, equitable digital workforce and create the legacy of Canada's first Integrated Program.

Thank you,



Fay Arjomandi
Founder and CEO
mimik Technology Inc.

School of the Arts, Media, Performance & Design

Major Modification Proposal
BFA in Creative Technologies
Markham Campus

November 2021

Table of Contents

Major Modifications to Existing Programs
Proposal Template

Major Modifications to Existing Programs fall under Section 5 of the York University Quality Assurance Procedures (YUQAP):
https://yuqap.info.yorku.ca/home/procedures/protocols/major-modifications-to-existing-programs/

The following changes are considered to be major modifications:

a) Substantive changes to learning outcomes and/or approved requirements that comprise up to approximately one-third of the program serve as a guideline for inclusion under the major modification guideline.
b) Major changes to courses comprising a significant proportion of the program and making an important contribution to meeting program learning outcomes (approximately one-third of courses).
c) The addition of a new major (undergraduate) where a similar major exists.
d) A new specialization at the graduate level.
e) Addition or deletion of streams.
f) The addition of a new option (e.g., location or part-time/full-time) within an existing program.
g) Establishment of undergraduate certificates.
h) The merger of two or more programs.
i) Establishment of a minor program or option.
j) The offering of an existing program substantially online where it had previously been offered in face-to-face mode, or vice versa.
k) At the master's level, the introduction or deletion of a major research paper or thesis, course-only, co-op placement, internship, or practicum option.
l) The introduction or deletion of a field in a graduate program.
m) The creation of a collaborative specialization at the graduate level.
n) The creation of combined degrees (existing programs), either undergraduate, graduate, or undergraduate/graduate.
o) Any change to the requirements for graduate program candidacy examinations or residence requirements

Note: *Separate templates exist for the remaining types of Major Modifications, specifically:*

New undergraduate certificates
Closure of undergraduate certificates *(see Program Closure template)*

Major Modifications Proposal

1. Faculty: AMPD
2. Department: Governance at Markham is still TBD, but we recommend an Interdisciplinary Council of AMPD departments at the outset of the program.
3. Program: Creative Technologies
4. Degree Designation: BFA
5. Type of Modification: Revision of the Integrative Arts program as a Markham-specific, pan-faculty program in Creative Technologies, requiring changes to program requirements and content that affect the learning outcomes.
6. Location: Markham Campus
7. Effective Date: September 2023

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8. Provide a general description of the proposed changes to the program.

   The Specialized BFA in **Creative Technologies** is proposed as a major modification of Integrative Arts as a new major for the Markham Campus. The pan-faculty BFA in Integrative Arts places an emphasis on creative methodologies, interdisciplinary study of the arts, and engagement in the creative industries by combining arts and technical skills with a special focus on community engagement and social justice.

   At Markham, Creative Technologies will centre on critical entrepreneurship by blending creative practice and theory with technological expertise and experiential learning in community contexts. As with Integrative Arts, Creative Technologies does not require a portfolio, which can be an obstacle for students who do not have access to arts training prior to university. This major will enable students to pursue courses in three broad pathways (See Appendix E – Creative Technologies Pathways & Community Resources):

   - **Engaging Research**: Research-Creation in Creative Technologies
   - **Reshaping Industry:** Creative Technologies Industry Engagement
   - **Building Community:** Participatory Creative Technologies

By pathways, we are not referring to separate streams, but rather areas of emphasis from which students can opt to select courses. Crucially, students can move between these pathways as they pursue their degree. While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.

There are several points of distinction between Creative Technologies and Integrative Arts: the new program's adoption of the 1.0 credit course model; an emphasis on entrepreneurship in creative fields; a commitment to social engagement and experiential educational opportunities including a pilot Co-op program; and the program's site-specificity in Markham and York Region. In keeping with Integrative Arts' commitment to C4: Cross-Campus Capstone Classroom, Creative Technologies also has much in common with the C4 project through new initiatives envisioned at Markham. They share a foregrounding of collaboration, strategies for continuous learning, and effective communication across diverse settings as required for the future of work in the 21st century. Creative Technologies de-emphasizes the individual artist or creator as knowledge producer and energizes collaborative project development across all four years of study. In doing so, the program underscores the process of collaboration itself as the site of creative practice, while providing students with the foundational knowledge needed to navigate new and evolving fields, and to create new jobs for themselves and for others.

While overlapping in program structure and spirit, Creative Technologies offers a range of courses available only in Markham (unlike Integrative Arts which is open to a spectrum of in-person studio and studies courses offered by AMPD departments at Keele); a series of 1.0 credit courses focused on "tech-know" and career-building skills; an emphasis on entrepreneurship in creative fields; specialized courses in community-engagement by experts in this field, and a commitment to experiential learning by emphasizing collaboration as a necessary creative mindset of the 21st century. This program orientation will be facilitated through experiential education opportunities, including participation in the C4 Project and a pilot Co-op option.

In a report provided by Higher Education Strategy Associates, *Options and Analysis of Creative Technologies,* there is a wide variety of program designs under the program title **Creative Technologies**. The HESA report further notes that this program modification proposal is both rooted in critical inquiry into contemporary technologies and modular in the sorts of technologies that students can study.

Notably, the report indicates that "something of an outlier for CT programs, particularly in that many of the core courses has students interrogate different socio-economic themes, understand the role of digital art in colonial structures in thinking about how art can contribute to and shape conversations and efforts around decolonization, and get practical training in using arts technologies and coding in sustainable and ethical ways."[1]

Our aim in developing this program at York's Markham Campus is two-fold:

(1) the program can develop its own identity and distinct approaches free from an existing nomenclature that is already associated with a known institution;

(2) the program can develop an understanding in the minds of incoming students, as a connection among learners seeking work in an entrepreneurial mode, acquiring a diverse skills base, and connecting emerging arts and media with public engagement.

The program's distinct approach will further support student enrollment and cement prospective students' understanding of AMPD's unique offerings in this area, as Creative Technologies is developed in coordination with the complementary Integrative Arts program. These two programs stand to help define one another through a range of cross-listings.

We believe York's Creative Technologies program will carve a new niche within these comparable and competing programs in Ontario, Canada, the United States, and other international centres. In the immediate vicinity within Ontario are several offerings at the Ontario College of Art and Design University and at Ryerson University that must be considered. Both of these institutions are significant as they draw on students considering public universities, especially those immediately local to Toronto. The programs range from "Art Media and Design," "Strategic Foresight and Innovation," "Digital Futures," "Integrated Media," and "Games and Play" at OCADU to "New Media" and "Creative Industries" at Ryerson. The number and breadth of these programs indicate a high demand for degrees covering these topics, practices and skills training, and a commensurate job market to support those skills.

[1.] "Options and Analysis of Creative Technologies." *Higher Education Strategy Associates*. 2021: 4.

9. Provide the rationale for the proposed changes.

The AMPD Markham Working Group resumed its work in Fall 2020 by developing a Vision Statement for the proposed curriculum. Central to the committee's vision for Creative Technologies is that the new Markham program will provide modular and flexible learning pathways that are post-disciplinary, outward-facing, and connected to communities and industry (see Appendix E – Creative Technologies Pathways & Community Resources.

As with our Integrative Arts program, Creative Technologies courses will be pedagogically innovative and oriented to open learning and experiential education while emphasizing a decolonial understanding of world affairs at all stages. The Markham program draws on strengths of all departmental areas in AMPD, including a range of online and blended courses that can support all campuses. For this reason, a modification to the pan-faculty Integrative Arts program is the most sensible way to develop new course offerings at Markham.

Creative Technologies overlaps with but is distinct from other AMPD programs. The Media Arts stream of the BFA Film in the Department of Cinema and Media Arts is keenly oriented to digital narration and storytelling, and several 1.0 credit options and other courses offered by this program will be integral to a Creative Technologies student's flexible pathways. Likewise, the Digital Media program in the Department of Computational Arts, in conjunction with Computer Science in the Lassonde School of Engineering, offers clear combinations of creative practice and digital technical skills. The Department of Design offers a BDes with specializations in visual communication, information design, and interaction design. Together, these differ from other undergraduate offerings from AMPD and the proposed Creative Technologies program, although areas of strength could serve a vital role in the new program's future curriculum. These are several points of possible expansion and cross-listing for new and existing faculty to explore where they may want to offer new transdisciplinary teaching. Specialized courses in Markham in community-engagement, decolonizing arts and technologies, creative technologies in industry engagement, and entrepreneurship will also be of interest to Keele/AMPD students as electives. Moreover, the Creative Technologies program can support existing graduate degrees in AMPD, as it is expected that students interested in professional arts careers and/or ongoing research pathways would be encouraged to pursue graduate programs in AMPD at the Keele campus.

10. Comment on the alignment between the program changes with Faculty and/or University academic plans.

The proposed Creative Technologies BFA's emphasis on combining creative practice with technological tools, collaborative experiences at all levels of study, decolonization and social justice aligns with York University's larger academic vision in Markham: to develop a campus "centred on technology and entrepreneurship"(2).[1] Diversely finished and equipped spaces are dispersed on multiple floors of the building, leveraging adjacencies to other facilities and academic units and enabling interactions between students and faculty of different disciplines into the daily routines of campus circulation. Planning has included outfitting studio spaces for work with a variety of emerging technologies, and also for spaces that can engage an immediate community outdoors through workshops, presentations and gallery exhibition. Creative Technologies is committed to the priorities outlined in York's University 2020-2025 Academic Plan, emphasizing in particular that "digital inter-connectivity and physical mobility of people generate complexity but also immense possibilities to accelerate collaboration and problem solving" and that "technology is simultaneously enabling, enhancing, and disrupting every sphere of life and work, as well as revolutionizing how we all learn, think, and create" (4). The need to rethink our programs to address emerging societal issues and a fluid labour market calls for flexible and forward-thinking pedagogical approaches and cross-disciplinary thinking and to "pursue inclusive excellence by decolonizing curriculum and ensuring our graduates are known for their global mindset, ethical judgment, and superior ability to integrate diverse ideas and worldviews" (6). As emerging communications and media technologies enable us to produce and transfer data at increasing rates and volumes, these data saturate our social practices, built environments, health-care systems, and aspirations for a sustainable future. Amid this context of continuous change, creative thinkers are needed to collaborate with an ethical mindset that foregrounds sustainability, equity, and decolonization. **Creative Technologies** meets this need as it offers a curriculum to begin making community-focused work while in university and as a launchpad for professional practice across a range of possible fields, including work in industries still in development. Students will graduate not only with technical and artistic skills, but also with a portfolio of collaborative real-world projects, novel team-work solutions, and individual creative works that demonstrate transferable skills and expertise.

The **BFA in Creative Technologies** is equally well-aligned with AMPD's 50+ Strategic Plan[2.] AMPD describes itself as a future-focused art and design school that connects cultural expression with evolving technologies to empower future leaders, who are ready to build more equitable and sustainable futures for themselves and their communities. Its vision is to be "Canada's leading school for socially engaged

artists, designers and thinkers committed to connecting globally recognized work with sustained local impact." Creative Technologies is, accordingly, strongly aligned with a future focus in its emphasis on emerging technologies as the basis for artistic research and invention. Further, its transdisciplinary structure and content promise to fulfill most directly the objective of connecting the arts with other fields such as health, education or technology. As with Integrative Arts, the mission of our Creative Technologies program is oriented to "connecting cultural expression with evolving technologies" in order to "collaborate with future leaders who are ready to build more equitable and sustainable futures for themselves and their communities." Through its emphasis on creative and collaborative methodologies and interdisciplinary study across the arts, Creative Technologies responds to the call "to build new connections across social divisions, and to imagine and create sustainable futures." As outlined in AMPD's strategic plan, Creative Technologies will provide a community-facing engagement with creative industries "built through connections: across departments and disciplines; across the University; across diverse industries, communities, and beyond." Creative Technologies addresses AMPD's four major theme areas by connecting **self + community, arts + technology, imagination + industry, and edge + centre**. The curriculum of the Markham Creative Technologies program will promote collaboration across all four years of study through a structure that brings students together in a common first year, encourages exploration through flexible curricular laneways in their second and third years including experiential educational opportunities such as Field Placement and a proposed Co-op program that will serve as a pilot project for all of AMPD, and a portfolio-building final year that enables graduates to emphasize both individual and teamwork-driven capstone projects.

Most importantly, as with Integrative Arts and other programs in AMPD, the decolonization of knowledge and methods which is part and parcel of the social justice framework within which this program is grounded will enable a reimagining of creative practice and theorization which does not centre white, Western approaches, but places them in dialogue with alternative epistemologies. Indeed, it is fully expected that the hybrid practices which will emerge out of the Integrative Arts and Creative Technologies programs will be significantly shaped by feminist, queer and trans, Black and Indigenous, abled and disabled perspectives, thereby opening them up to a broader world of experience.

Finally, the program will serve as infrastructure for new partnerships between AMPD and external stakeholders in local government, industry, cultural, and community groups. The emphasis on creation with emerging technologies is an

invitation to nearby tech companies of different kinds to collaborate on keystone projects, internships, class visits, guest instruction and case studies that can be of mutual benefit and serve as gateways to employment. Likewise, the social emphasis of the program will drive outreach to community groups which have evolved to service the diverse populations of the Markham region. These directly engage different cultures and languages into artmaking practices, social practices with art and design, human-centered design and user collaboration. Markham's fast-growing cultural sector, including museums, galleries, theatres, and distinct commitment to public art, is closely linked to the project to develop a new civic centre in the Markham Centre district where the MCC will be located. We see a unique opportunity to partner with local institutions, not only for work-integrated learning but also **city-integrated learning** where institutional partners and curricular pathways are deeply integrated.

[2.] *York University Academic Plan 2020-2025*, 29 June 2020.
[3.] A • M • P • D 50+, School of the Arts, Media, Performance & Design Strategic Plan, 2020-2025

11. If applicable, provide a detailed outline of the changes to the program and the associated learning outcomes, including how the proposed requirements will support the achievement of program learning outcomes. Programs should have eight to twelve program learning outcomes. Describe how the achievement of the program learning outcomes will be assessed and how that assessment will be documented. (i.e., the mapping of the courses to the program learning outcomes; graduate outcomes).

    The Markham Working Group has recommended refined and consolidated Program Learning Outcomes based in part on the Integrative Arts program. These Program Learning Outcomes have been redeveloped in the spirit of student-centred language, and are included in Appendix D. As part of this process, we both mapped the Learning Outcomes to the 6 categories proposed by the Ontario Council of Academic Vice-Presidents and to core courses, included in the Program Curriculum Template.

12. 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.

    The AMPD Markham Working Group, formed in November 2019 to develop the new program, has been comprised of faculty members from departments of Visual Arts

and Art History, Computational Arts, Music, Theatre, Cinema and Media Arts, and Dance. Faculty input during the development of the program has been integral to maintaining distinct identities and minimal overlap between Creative Technologies and programs already offered through AMPD on the Keele Campus. Within AMPD, ongoing consultation with Chairs and Departments continued into the Fall of 2019 and early Spring 2020, along with monthly reports to Dean. The planning strategy integrated considerations of the planning history, discussions and research from the early "Markham 1.0" exercises that culminated under the rubrics of Visualization, Entrepreneurship, Research, Games and Entertainment (VERGE) and then <Creative Ventures>. The former of these was marked by narrower specializations in Visualization, Games and Entertainment; the latter foregrounded "Creativity and entrepreneurship for creative cultural industries" and was, by comparison to the current plan, more singularly industrially oriented and less integrally working with other York programs at Markham. A Special Project Researcher, Dr. Jordan Geiger, came on board from late October 2019 through August 2020 in a role of curricular and spatial planning lead, with the charge to define the focus of the program and its relation to Keele campus offerings in coordination with the Working Group; and to participate in coordinating AMPD's offerings and spatial planning at Markham with other academic units. During that time, he moderated meetings of the Working Group, interviewed faculty, served as liaison to coordination meetings of the Vice Provost and with the Campus Development offices, and prepared a draft program brief that has broadly influenced this modification proposal.

Dr. Michael Darroch joined the Working Group in September 2020 when he took up the position of Associate Dean Academic in AMPD. In addition to moderating meetings of the Working Group, Dr. Darroch has held regular consultations with Alice Pitt, Senior Advisor, Markham Academic Strategic Planning, and Will Gage, Associate Vice-President, Teaching and Learning, as well as members of their teams. Consultations have also been held with the Dean of Libraries and Associate Dean, Libraries Digital Engagement and Strategy in relation to the Libraries and AMPD Markham Makerspaces as well as the Associate Dean, Program, LA&PS and members of the Department of Communication Studies in relation to the proposed program stream in Social Media & Public Relations. Two new Faculty experts working in creative technologies program development and social-engagement were hired in 2021 (Dr. Rebecca Caines and Dr. Marissa Largo), who have contributed substantially to the shape of this proposal.

Dr. Darroch also Chaired one committee developing the two "Shared Curriculum" courses for the Markham Campus: "Being a Digital Citizen" and "Mobilizing Digital

Citizenship", while colleagues from other faculties are examining how a framework for shared electives and other criteria will work specifically at the Markham Campus.

13. If applicable, describe changes to any admission requirements and on the appropriateness of the revised requirements for the achievement of the program learning outcomes.

    The admission and degree requirements will be consistent with the requirements for Integrative Arts. The BFA in Creative Technologies will meet the requirements needed for admission into any program at York. An upper-level high school arts course will be encouraged, but not required. As noted previously, there is no portfolio requirement, which we have found to be a boundary for students who do not have access to traditional artistic or musical training prior to entering university. We believe this will be a significant draw for students interested in Creative Industries but whose knowledge and experience may reside outside of traditional artistic or musical training.

14. 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.

    Creative Technologies will be a 120-credit program based in part on existing course offerings within the Integrative Arts program and resources from other programs and the Shared Curriculum at the Markham Campus.

    We are proposing to include 5 existing required courses, some of which are currently under development for the Integrative Arts program:

    - FA/PANF 1100 3.0 Introduction to Creative Methodologies I (open to non-Majors)
    - FA/PANF 1110 3.0 Introduction to Creative Methodologies II (open to non-Majors)
    - FA/MUSI 2002 3.0 Introduction to Entrepreneurship for Artists
    - FA/PANF 3999 3.0 Collaborative Project
    - FA/PANF 4999 6.0 Capstone Project (C4)

    In addition, we further envisage a series of new full-term courses to be required for the Creative Technologies program at the MCC (through in-person, blended/hybrid, and online options) including:

- FA/PANF 1XXX 3.0 Foundations of Collaboration
- FA/PANF 1XXX 3.0 Histories of Applied Digital Arts
- FA/PANF 2XXX 3.0 Community Project
- FA/PANF 2XXX 3.0 Decolonizing the Arts
- FA/PANF 2XXX 3.0 Understanding Coding
- FA/PANF 3XXX 3.0 Art as Disruption: Experimentation + Decolonization
- FA/PANF 4XXX 6.0 Individual Capstone

Several other key requirements make up the foundation of our program:

- 1 3.0 course from a sequence of courses focused on the ethical transformation of technology
- 1 6.0 EE/WIL experience opportunity
- 9 credits from 1.0 credit options during the first three years of the program (3 per year).

In conversation with other faculties and libraries, we are also planning a series of 1.0 credit courses open to all students at the MCC that would provide foundational and advanced training in specific technological and professional skills through the first three years of the program, culminating in project leadership opportunities in the year four capstone projects. Examples of 1.0 credit courses may include foundational courses in:

- fabrication techniques such as 3D printing or laser cutting
- media for digital performance
- animation and visual effects
- as well as the professional communications skills needed to navigate an era of social media.

Certain 1.0 credit courses have already been launched by the Media Arts stream of the BFA Film in the Department of Cinema and Media Arts. In the longer run, we envisage that certain combinations of these 1.0 courses could be packaged as **micro-credential** offerings to non-full-time students in order to earn a certification in a certain area and digital badge.

While the Department of Computational Arts will administer the Integrative Arts program on behalf of AMPD, governance for the Creative Technologies program is still being determined in conversations with other programs at the Markham Campus. We recommend a governance structure similar to that of the Integrative Arts program, a Governing Council of members representing all departments in AMPD as well as student representatives. AMPD has hired the two aforementioned tenure-track professorial stream faculty members in Creative Technologies (July

2021) and will conduct a search for a teaching-stream faculty member to join the program in July 2022, representing 3 AMPD departments. We recommend that this Council be formed in 2022 for a three-year term, Chaired by the Associate Dean Academic. After the term ends in 2025, a review of the administrative structure will be undertaken to assess whether a Program Coordinator is required to meet student needs and to communicate directly with Markham's new Vice-Provost.

As the program grows, it will be important to hire faculty that includes diverse perspectives in order to properly address the social justice mandate of this program, including those of Black, Indigenous, Latinx, Asian, near and Middle Eastern, and perspectives by people of colour with intersectional attention to feminist, queer, trans, and critical disability studies, among others.

15. When applicable, comment on the appropriateness of the revised mode(s) of delivery for the achievement of the program learning outcomes.

    As with other programs in Markham, Creative Technologies will enable a student to complete the entire program at the Markham Campus. Out of necessity, the program cannot rely on the same range of pathways available to students across the seven AMPD departments at Keele.

    The program will also be facilitated through a combination of online and blended learning models to enable sufficient numbers of courses to be offered to the first cohorts, and as our teaching complement grows. With the likelihood that the COVID-19 pandemic is accelerating increased interest and ease with remote teaching and learning, we now expect the Creative Technologies program to benefit from a range of future online offerings that were not yet on the horizon only a few years ago. The range of courses that we propose (both 1.0 and 3.0) reflect a prediction of steady-state enrolment. We recognize that, as other Markham programs are unveiled and offer opportunities for integration with Creative Technologies, our proposed course list may necessarily change.

16. Is the assessment of teaching and learning within the program changing? If so, comment on the appropriateness of the revised forms of assessment to the achievement of the program learning outcomes.

    The Markham Campus will offer technological development through a range of exciting new facilities including the Transmedia Labs on the ground floor and the AMPD Makerspace. For the most part, we expect assessments to remain aligned with courses in the Integrative Arts program. That said, our new Markham facilities are geared towards enabling students to work with greater autonomy than in some

of our existing programs, valuing and prioritizing different benchmarks for knowledge acquisition, and new modes of presenting work deriving from experiential education and work-integrated-learning opportunities. It should be noted that most traditional art studio courses offered at AMPD Keele will not be replicated at Markham. To this end, key courses of the Creative Technologies program extend the Integrative Arts program's emphasis on collaboration and curiosity, and while Program Learning Outcomes substantially overlap, they also diverge in several ways. Core courses for Creative Technologies, including new courses oriented to the fundamentals of collaboration and team-based creative practice, have been matched with Program Learning Outcomes in the MC Program Curriculum Template.

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

    N/A as Creative Technologies students will be entering the program for the first time when the MCC opens in 2023.

18. Provide the following appendices:

    A) Program Learning Outcomes (eight to twelve):

    See the attached Appendices D and E for our preliminary Curriculum Map of core requirements matched with Program Learning outcomes.

    B) 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.

    A side-by-side comparison is provided in Appendix A, and breakdown of the program by year in Appendix B, an example of the course options that students can take at Markham and across AMPD in Appendix C.

    As with Integrative Arts, Creative Technologies offers core courses in every year of the program that help to develop a cohort among the students in the program, while providing context and emphasis to the courses they are taking from across the faculty. A noted distinction between the programs are the 1.0 credit courses to be offered through the Markham Centre Campus, although we anticipate that these courses can a) be open to non-majors and all students in Markham; b) offered predominantly online and, space-permitting, open to students at Keele and Glendon campuses as well. In Creative Technologies, core courses focus on methodology, transdisciplinary study of the arts, a commitment to collaborative learning, and

experiential education and work-integrated-learning opportunities in the creative industries.

In addition, students are required to take courses from other areas offered by AMPD, either in-person in Markham or remotely through Keele, in order to gain depth and breadth in AMPD disciplines. Students are required to complete courses constituting 6 credits at the 3000-level and 12 capstone credits at the 4000-level; the two 6.0 capstone courses are focused on individual and collaborative portfolio-building experience (towards fulfilling the required 24 credits at the 3000 and 4000 levels). While prerequisites will be minimized, in order to take 4000-level courses in a given area, students may be expected to complete prerequisites required for those courses.

APPENDIX A: Side-by-Side Comparison

A side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

Integrative Arts at Keele:	Creative Technologies at Markham:
Specialized Honours BFA Program in Integrative Arts (Studio) **A program core of 30 credits that consists of the following:** • FA/PANF 1100 3.0 Creative Methodologies I • FA/PANF 1110 3.0 Creative Methodologies II • FA/PANF 2100 3.0 Research-Creation • FA/DATT 2400 3.0 Creative Coding I • FA/MUSI 2002 3.0 Introduction to Entrepreneurship in the Arts • FA/PANF 3100 3.0 Ethics in the Arts • FA/PANF 3999 3.0 Collaborative Project • FA/PANF 4999 6.0 Capstone **33 studio course credits, and 21 studies course credits** in AMPD with a minimum of 18 credits in one area (excluding core courses) [Cinema and Media Arts, Computational Arts, Dance, Music, Theatre, Visual Art and Art History], including 18 credits at 3000-level and 18 credits at 4000-level. Of the 4000-level credits, at least 6.0 should be in one area. *Note: some courses in each cluster will be required for upper-level courses.* **12 credits electives** **6 credits FA/xxxx 1900** **18 credits general education**	**Specialized Honours BFA Program in Creative Technologies (MCC)** **A program core of 42 credits that consists of the following:** • FA/PANF 1100 3.0 Creative Methodologies I • FA/PANF 1110 3.0 Creative Methodologies II • FA/PANF 1XXX 3.0 Fundamentals of Collaboration • FA/PANF 1XXX 3.0 Histories of Applied Digital Arts • FA/PANF 2XXX 3.0 Decolonizing the Arts • FA/MUSI 2002 3.0 Introduction to Entrepreneurship in the Arts • FA/PANF 2XXX 3.0 Community Project • FA/PANF 2XXX 3.0 Understanding Coding • FA/PANF 3999 3.0 Collaborative Project • FA/PANF 3XXX 3.0 Art as Disruption: Experimentation + Decolonization FA/PANF 4XXX 6.0 Individual Capstone • FA/PANF 4999 6.0 Collaborative Capstone (C4) in addition to: **9 x 1.0 credits** in years 1-3 **3 credits: 1 Ethics course** **6 credits: 1 EE/WIL experience** **18 AMPD elective credits** (ideally but not exclusively at Markham). Students should receive a minimum of 24 credits at the 3000 or 4000-level. **6 AMPD credits - FA/XXXX 1900** **18 credits free electives** **18 credits of General Education courses, 6 of which must be chosen from Markham "Shared Curriculum" courses** To graduate with a Specialized Honours degree in AMPD, students must maintain an Overall and a Major GPA of 5.00 (C+).

APPENDIX B: Program Breakdown by Year:

YEAR 1: 15 Credits

The vision for Year 1 in the program is a commitment to:

- fostering a mindset shift among our students to think differently about arts, experimentation, and collaboration
- research-creation methodologies
- the fundamentals of collaboration across the arts and creative industries
- an overview of the foundations of technological skills through 1.0 credit courses

FA/PANF 1100 3.0 Introduction to Creative Methodologies I and FA/PANF 1110 3.0 Introduction to Creative Methodologies have been redeveloped for the Integrative Arts program to only require one course director, be taught over two terms, and be open to non-majors. Students will take two new courses, FA/PANF 3.0 1XXX Fundamentals of Collaboration and FA/PANF 1XXX 3.0 Histories of Applied Digital Arts, and are required to choose three from a list of 1.0 credit courses. Several relevant 1.0 credit courses will already be offered online through the Media Arts program of the Department of Cinema and Media Arts:

- FILM 1100A 1.0 Video & Sound Editing with Davinci Resolve
- FILM 1100B 1.0 3D with Blender
- FILM 1100C 1.0 Web Coding HTML/CSS/JS

In addition, we will be working alongside our two new Creative Technologies faculty members (starting 1 July 2021) to develop a series of 1.0 courses including:

- Gateway skills - Adobe Creative Suite
- Fabrication - Textiles
- Fabrication - 3D Printing
- Fabrication - Laser Cutting/Etching
- In the Audio Studio
- Transmedia Lab Technologies
- Media for Digital Performance

- Intro to After Effects
- Processing for Visual Scripting
- Physical Computing (Arduino)
- Max MSP

YEAR 2: 18 credits

The vision for Year 2 in the program is a commitment to:

- decolonizing artistic pedagogies (an online course reinforced through collaborative projects);
- an outward-looking and community-facing experience
- developing professional skills for the creative industries
- experience in understanding coding
- learning to communicate different kinds of tech skills
- 4-week 1.0 credit "tech-know" and professional skills courses, breaking into smaller groups
- building a vocabulary and confidence through a collaborative project

The program includes a course added to the core developed by our colleagues in the Department of Music specifically for the Markham program, FA/MUSI 2002 3.0 An Introduction to Entrepreneurship for Artists. Further, we will develop an online course, FA/PANF 2XXX 3.0 Decolonizing the Arts, that is also open to non-majors. Through a new course, FA/PANF 2XXX 2.0 Understanding Coding, student will learn the essentials of learning to read, understand, and lightly modify existing code. A new course FA/PANF 2XXX 3.0 Community Project will incorporate community-engaged research-creation by bringing a range of community and industry partners into the classroom. While students will take another set of 3 1.0 credit courses, these will break down into smaller group assignments. Two further 1.0 credit courses already offered online by the Media Arts program (Department of Cinema and Media Arts) will be available to Markham students:

- FILM 2100A 1.0 Unreal Engine Introduction
- FILM 2100B 1.0 Animation & VFX with Fusion

Additional 1.0 credit courses may include:

- Media Systems/Networking
- Website development
- Strategic Communication (including email skills and professional skills in social media (a possible collaboration with Social Media & Public Relations)
- Introduction to Project Development
- Streaming Discoverability (How to get your project online)

YEAR 3: 15 credits

The vision for Year 3 in the program is a commitment to:

- the opportunity for a EE/WIL experience (including the plan to pilot a Co-op program with community and industry partners)
- further community-facing engagement by bringing in expertise from the outside
- thinking about art as disruption through experimentation and decolonizing practices and methodologies
- continuation of advanced "tech-know", professional skills, and project management 1.0 credit courses
- applying "tech-know" 1.0 credit course skill sets to smaller prototyping projects
- leadership in team-based projects
- connecting to ySpace Markham

The third-year core course, FA/PANF 3999 3.0 Collaborative Project is an experiential-education focussed course shared with Integrative Arts in which students develop a single project together as a group, with dissemination in a public forum. The course is meant to build on the complimentary skills of the students and to help them develop project management skills. They will complete their final 1.0 credit courses.

1.0 credit courses in Year 3 may include:

- Interactive Installation and Performance
- Impact producing - how to brand your program, marketing techniques
- How to Freelance
- Introduction to Project Management
- Portfolio Building
- Basics of Accounting and Insurance
- If offered, the possibility to choose a 1.0 credit course from other programs

YEAR 4: 12 Credits

The vision for Year 4 of the program is a commitment to:

- developing the students' individual portfolio projects
- practicing project management through a collaborative capstone (C4) portfolio projects that are community- and industry-integrated

Students take FA/PANF 4999 6.0 Capstone Project, a collaborative capstone course connected to the C4 network, where students work in smaller groups. Students will also complete a new FA/PANF 4XXX 6.0 Individual Capstone to build a comprehensive set of portfolios upon graduation.

APPENDIX C: List of AMPD Elective Courses

The following is a list of example courses that students in Creative Technologies can currently take across AMPD to satisfy the degree requirements for their degree. This list will be amended and updated in consultation with participating units, and as the shared framework for electives at Markham Campus is further developed. We anticipate that this list will continually grow as the program matures and becomes part of the fabric of AMPD.

PANF courses that will be available to students in Markham:

FA/PANF 1010 3.00	Introduction to Design: Practice and Appreciation (for non-majors)
FA/PANF 1800 6.00	The Biology of Story
FA/PANF 1900 3.00	Skills for Success in the Arts
FA/PANF 2000 3.00	Academic Writing in the Arts: Joining the Conversation
FA/PANF 2102 3.00	Making Digital Movies With Mobile Media
FA/PANF 3140 3.00	Production Design for Film 1
FA/PANF 3250 3.00	Screen Acting: Practical Approaches for Crafting Screen Performance
FA/PANF 3XXX 3.00	Applied Sound (in development)
FA/PANF 4140 3.00	Production Design for Film
FA/PANF 4145 3.00	Shooting the Set: Making Innovative Films on a Sound Stage
FA/PANF 4202 3.00	"When We Were Fab" Expo 67, the Arts in Canada, and the Utopian Moment

APPENDIX D. Program Learning Outcomes

As noted, the Markham Working Group recommends the following refined and consolidated Program Learning Outcomes. These Program Learning Outcomes have been redeveloped in the spirit of student-centred language.

By the end of this program, students will:

LO1. Combine technological skills with key artistic working methodologies to generate ideas, proposals, solutions, or arguments independently and/or collaboratively within an interdisciplinary professional setting.

LO2. Utilize key software and hardware in the creation of high-quality, socially-engaged digital arts and creative industry projects.

LO3. Create, critique, and evaluate applied digital arts projects against developed aesthetic, conceptual, critical, and historical criteria and frameworks.

LO4. Make informed judgements about the ethics surrounding technological development and applications of addressing real-world problems including, but not limited to, AI, financial technologies, and the fast-moving realities of climate change.

LO5. Demonstrate the skills of ethical decision-making, leadership, and effective collaboration at all stages of the design and implementation process, especially while applying a decolonial perspective to address issues of equity and the advancement of social justice frameworks.

LO6. Develop entrepreneurial initiatives and knowledge mobilization strategies, both traditional and technological, independently, and with/for organizations and the broader public in the development of projects and proposals across creative and social justice-informed industries.

LO7. Apply work-integrated learning opportunities to collaborate with community organizations, NGOs, industry partners, and other stakeholders in the city of Markham, the wider York region, and globally.

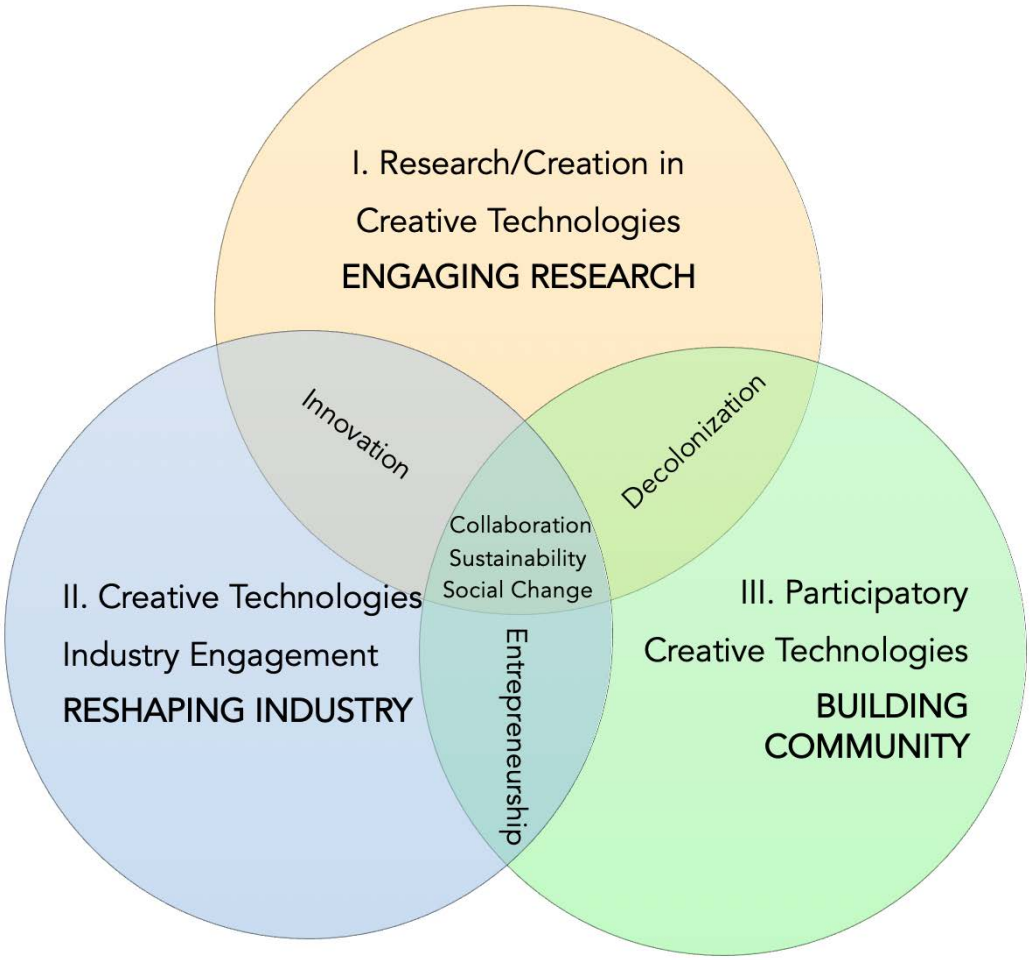
	PROGRAM LEARNING OUTCOMES	LO1	LO2	LO3	LO4	LO5	LO6	LO7
1	Depth and Breadth of Knowledge	x		x	x			
2	Knowledge of Methodologies	x		x		x		
3	Application of Knowledge	x	x	x	x	x	x	
4	Communication Skills		x			x	x	x
5	Awareness of Limits of Knowledge			x	x	x	x	
6	Autonomy and Professional Capacity	x	x	x		x	x	x

APPENDIX E: Program Brief

Students can follow one of the three flexible pathways, areas of emphasis that are not mutually exclusive. These are:

I. Research-Creation in Creative Technologies: **Engaging Research**
II. Creative Technologies Industry Engagement: **Reshaping Industry**
III. Participatory Creative Technologies: **Building Community**
IV. Students can opt to select courses from any of these pathways

The 3 pathways correspond to 3 major interest groups/sites in which Creative Technologies may emerge and/or inform.



Program values:

1) Collaboration - interdisciplinary teamwork required to solve complex problems.
2) Sustainability
3) Social Change
4) Innovation
5) Decolonization
6) Entrepreneurship

While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.

I. Research/Creation in Creative Technologies (Engaging Research)

This pathway focuses on the creative application of technology for inquiry and artistry, the use of emergent technology to enhance research-creation, and research and development in new creative technologies that spur innovation and social transformation. Guiding values include innovation in research-creation theories and methodologies and decolonization of dominant ways of knowing and making. This pathway best prepares students for post-graduate degree programs in advanced research-creation, education, analytics, and related fields of study. Careers in research-creation in creative technologies include interactive educational technologist, academic careers (teacher, researcher, professor), professional artist, policy advisor or researcher in the cultural sector or creative industries.

II. Creative Technologies Industry Engagement (Reshaping Industry)

Propelled by the values of innovation and entrepreneurship, this pathway focuses on the creative application of technology-driven digital and physical experiences to industry. Students will experiment with emerging technologies, platforms, and ideas to develop solutions (products and services) to industry needs. Careers in creative technologies in industry include creative technologist in advertising, experiential, and event marketing, data visualization specialist, VFX artist/animator, consultant in socially responsible creative industry partners, including local government, the education sector, and/or not-for-profits or building own (including areas like data visualization, sonification, web and technology solutions for festivals, live events, product demos, interactive educational content, serious games.)

III. Participatory Creative Technologies (Building Community)

Guided by the values of entrepreneurship and decolonization, this pathway focuses on the mobilization of creative technologies to engage with communities from a wide range of socio-cultural contexts for increased participation in society and positive social change**.** Through digital storytelling, digital literacies, the democratization of digital

media production and distribution, and community-led content creation, students participate in community empowerment by applying creative technologies, social practice, and participatory methodologies. Careers in participatory creative technologies include interactive exhibition designer, community artist and organizer, public event co-coordinator, and programing director in areas such as healthcare, digital humanities, citizen science, and economic development and culture.

APPENDIX F: York Region Assets and Organizations

The following is a list of governmental, arts and cultural, private sector, technology hubs, and community-based organizations in York Region. These organizations are potential partners for experiential education and/or co-operative education in the Creative Technologies program.

Aurora Cultural Centre 22 Church St, Aurora, Ontario, L4G 1G4 https://auroraculturalcentre.ca/ *Since 2010, the Centre has welcomed the community to create and participate in diverse experiences for all ages. Located in a beautifully restored 1886 schoolhouse, we proudly program four vibrant gallery exhibition spaces, a range of instructional classes for children, teens and adults, an eclectic live music series, special family events, summer arts camps, and offer stunning rental spaces for a unique experience. Partnerships – with our community, businesses, schools and more – are at the heart of our operations, and vital to our success.*
CAYR* Community Connections https://cayrcc.org/about/about-us/ CAYR Community Connections was originally founded as the AIDS Committee of York Region in 1993 and formally incorporated as a registered charitable organization in 1996.
Chippewas of Georgina Island https://www.georginaisland.com/ *Our mission is to preserve, promote and advance the culture, health, education, economic and social well-being of our community – including our language, history and spirituality. As we look towards future generations, and honor our traditional values, we will strive to provide opportunities for our First Nation, to instill pride in our membership and to promote the development of a healthy, safe and self-sufficient community.*
Flato Markham Theatre 171 Town Centre Boulevard, Markham, Ontario, L3R 8G5 https://flatomarkhamtheatre.ca/Online/default.asp *Flato Markham Theatre is one of Canada's premier theatre houses serving the York Region, the GTA and Markham residents. With over 300 live performances each year, the Theatre presents a performance calendar that showcases the cultural diversity of*

our community. Live theatre, concerts, comedy shows and family entertainment provide an ever-changing array of performing arts. Flato Markham Theatre continues to honour respected international artists and Canadian talent in performances offered throughout the annual professional entertainment season held September through May.

Georgina Arts Centre & Gallery
149 High St, Sutton, Ontario, L0E 1R0
http://gacag.com/

Located on High Street, in the heart of Sutton, the Georgina Arts Centre & Gallery is home to a rich collection of art and offers arts programming for children, youth and adults year-round. The work of Native artists and artisans is featured in the Biindigen First Nations Gallery. Also housed in the Gallery, is a gift shop which includes original creations by local artists and craftspeople.

Latcham Art Centre
2 Park Dr, Whitchurch-Stouffville, ON L4A 4K1
https://www.latchamartcentre.ca/

Latcham Art Centre hosts 5-6 curated exhibitions each year that reflect a range of artistic media and the cultural diversity of our province. Exhibitions are complemented with educational and public programs including school visits, public lectures, art workshops, classes and tours led by the curator, art educators and exhibiting artists. Additionally, the Art Centre annually hosts a juried exhibition, an exhibition of work by a local graduating high school art class, and an exhibition of work by art students from local elementary schools. The Art Centre supports artistic practices in the community by participating as a location in the annual Stouffville Studio Tour held in October, when local artists open their studios for the public to view their work.

City of Markham
101 Town Centre Boulevard, Markham, Ontario, L3R 9W3
https://www.markham.ca/wps/portal/home

More than 350,000 people call Markham home. So do hundreds of corporate head offices and more than one thousand high tech and life science companies. You'll find us in the heart of the Greater Toronto area. Founded in the 1790s, Markham is Canada's most diverse community. People who live here enjoy our rich history and heritage, award-winning community planning and services, and strong local economy.

Shared Places, Our Spaces: Markham's Public Realm Strategy *Initiated in 2011, the Public Realm Advisory Committee (PRAC) works with the City to develop strategies which enhance and animate Markham's public spaces through partnerships, community engagement and City leadership. The PRAC advocates, promotes and*

supports public realm programs and initiatives within existing communities in Markham. The PRAC reviews the annual public realm programs, encourages community involvement, establishes priorities, assists with the evaluation of submissions and recommends actions to Council for implementation of projects.

Markham Public Art *Markham's Public Art Program was first initiated in 2003 and formalized in 2012. Since 2013, five permanent artworks have been commissioned through the program, with two more currently in progress. In addition, the program has facilitated a series of community art initiatives in collaboration with the City's Public Realm section. In the fall of 2019, Markham City Council approved its Public Art Master Plan 2020-2024, and a related Implementation Plan in winter 2020. The objectives of the program are to inspire people to live, work, visit and invest in Markham; to celebrate the city's diverse cultures and heritage from multiple points of view; and to connect residents to Markham's built and natural environment.*

Markham Museum
9350 Markham Rd, Markham, ON L3P 3J3
https://www.markham.ca/wps/portal/home/arts/markham-museum

Markham Museum brings the present and past together. Learn about our city's history and the tools we use today in our changing world. The 25-acre Museum site offers exhibits, school programs, public programs, events, private event venues, and research facilities. In 2011, the Museum opened a building that is friendly to the environment. It has a large hall and a smaller one. The smaller hall has a display called "What is Markham? Discover our Evolving Community." This display shows you the changes that Markham has experienced over time. The Museum is receiving attention from around Canada for the way it connects with our community.*

Markham Public Library
https://markhampubliclibrary.ca/

Markham Public Library - where Markham's communities come together to imagine, create, learn, and grow. We are your public library providing everyone in the community with the opportunity for success. Our resources, staff, programs, and spaces enrich the lives of everyone in Markham. The library engages with the community to read, study, play, explore ideas, express their creativity and connect with each other. We help people build the life and vibrant community they desire.

MPL Makerspaces: https://markhampubliclibrary.ca/equipment-software/
Newcomer Services: https://markhampubliclibrary.ca/newcomers/#discover

Regional Municipality of York

Open Data *This is the public platform for exploring and downloading open data, discovering and building apps, and engaging to solve important local issues in York Region. You can analyze and combine Open datasets using maps, as well as develop new web and mobile applications. Let's make our great community even better, together!*

GIS Day *Past participants included government and school board officials; conservation authorities; GIS and information technology professionals; road engineers; water and wastewater engineers; planners; health service providers; and legal, finance, and human resource professionals, among others. Before the event, they submitted photos of their favorite places in the York region, which the Regional Municipality of York's GIS staff turned into story maps.*

Town of Newmarket

Art at 395 *Did you know you can view art on display at the Town of Newmarket Municipal Offices? There are 3 gallery spaces within the Town Offices for you to discover.*

Elman W. Campbell Museum *Owned by the Corporation of the Town of Newmarket and operated by the Elman W. Campbell Museum Board of Management, the museum is a non-profit, educational institution created for the purpose of collecting, preserving, researching, studying, exhibiting and interpreting artifacts related to the social, political and economic history of the Town of Newmarket and its environs from the time of the first settlers to thirty years before present, for the benefit of residents of the Town of Newmarket and visitors from outside the Town.*

Open Newmarket *In keeping with our commitment to making Newmarket even better, the Town is embracing the Open Data information movement and releasing data for free to the public.*

NewMakeIt
621 Timothy Street, Newmarket, L3Y 1R3
https://www.newmakeit.com/

This is a beautiful, spacious, multi-functional creative facility in Newmarket, Ontario. As the only industrial and digital workshops, training, and creative facility of its kind in York Region, we're helping inventors, visionaries, and innovators across York Region, in Toronto, and throughout the Greater Toronto Area, achieve their goals while changing the way people work. Our community shares tools & equipment, offers classes to the public, enjoys flexible membership and workspace, hosts speakers, special events and more.

Remington Contemporary Art Gallery (RCAG) | Downtown Markham

169 Enterprise Boulevard, Markham, ON L6G 0E7
https://downtownmarkham.ca/community/art/

The Remington Contemporary Art Gallery (RCAG) is the epicentre of The Remington Group's public art initiative in Downtown Markham. This exciting new gallery features a unique collection of work created by a distinguished and diverse group of international artists, and is integrated into all of Downtown Markham's public spaces. On the main floor of the gallery at 169 Enterprise Boulevard, visitors will experience a variety of multi-dimensional pieces of fine art intended to engage and inspire the viewer. A number of high-profile artists have been commissioned to fill the space with creations that reflect untraditional art forms and the eco-friendly values of The Remington Group.

Richmond Hill Performing Arts Centre
10268 Yonge St., Richmond Hill, ON, L4C 3B7
https://www.rhcentre.ca/

Located in the heart of the historic downtown, the Richmond Hill Centre for the Performing Arts (RHCPA) is a 4,000 square metre, 631 seat, state of the art cultural facility that offers a full season of professional entertainment celebrating the many cultures of York Region. The Centre is also home to Richmond Hill's diverse arts community, creating a major venue in the downtown core to bring Canadian and International performers to the area.

SV Robotics Academy
169 Enterprise Blvd #301, Markham, ON L6G 0E7
https://www.svrobotics.ca/

SV Online started with the idea of learning through real-world experiences. Our story begins in Toronto, Canada. Our team of instructors was mentored by Dr Vijayakumar, a University of Toronto professor. He inspired the vision of learning through doing. After his passing, we decided to carry on his vision.

*Currently in partnership with Innovation York, Y Space, and Lassonde School of Engineering

Varley Art Gallery of Markham
216 Main Street Unionville, Markham, Ontario, L3R 2H1
https://www.markham.ca/wps/portal/home/arts/varley-art-gallery

The Varley Art Gallery of Markham is a vital cultural hub for artists and diverse communities. A municipal gallery, we create critical conversations about Canadian art and society. We inspire local and national audiences to engage with art through outstanding exhibitions and rich public and educational programs relevant to the

communities we serve. We support artists from York region and seek to broaden access to the arts for diverse artists and cultural groups. We also share and celebrate the life and work of F.H. Varley, a founding member of the Group of Seven.

ventureLab
IBM Canada Limited, 3600 Steeles Ave E, Markham, ON L3R 9Z7
https://venturelab.ca/

ventureLAB is a leading technology hub that supports tech entrepreneurs and small businesses. Located in York Region, Canada's densest technology cluster, ventureLAB has supported over 2,000 entrepreneurs in a region that is home to over 4,300 technology companies and 65,000 tech jobs. ventureLAB's 50,000 square foot innovation hub is home to over 45 tech companies and innovation partners that employ over 300 people. At ventureLAB, we support tech entrepreneurs through programs focused on capital, talent, technology, and customers, to advance Canada's economy on a local, national and global scale.

York Region Arts Council
14845-6 Yonge Street, Suite 306, Aurora, ON, L4G 6H8
https://www.yorkregionartscouncil.com/

A hub for a vital and vibrant arts, culture, and tourism scene in York Region, by giving voice to the diverse artists and cultural organizations in our community through advocacy, education, programming and strategic partnerships.

YORK
UNIVERSITÉ
UNIVERSITY

SCHOOL OF THE ARTS, MEDIA, PERFORMANCE & DESIGN

Office of the Dean

4700 KEELE ST
TORONTO ON
CANADA M3J 1P3
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November 8, 2021

Dear colleagues,

I write to convey my enthusiastic support for a proposed major modification of the BFA Integrative Arts program to create the new Specialized BFA in Creative Technologies in the School of the Arts, Media, Performance & Design (AMPD) at the Markham Campus. This proposed program builds on and expands existing areas of strength and expertise in AMPD, while developing a distinctive approach to critical entrepreneurship with an explicit sense of creative placemaking in Markham and the North York Region.

As such, the program will provide new educational opportunities to York University students, both those situated in Markham and to those studying in existing programs at AMPD on the Keele Campus. With its emphasis on flexible learning pathways and collaborative project-based learning, this program offers a distinctive approach to education in the creative industries with an emphasis on critical entrepreneurship, technical skills, and community-focused practice.

The proposed program aligns with the stated goals of the York University Academic Plan, especially **21st-Century Learning** and the related call for . programs to address emerging issues and labour market needs that call for new pedagogical approaches and cross-disciplinary thinking." It also follows the goals of the **AMPD Strategic Plan** to develop new programs that facilitate "exploration and collaboration across AMPD programs" and the "development of new programs connecting creative technologies and community-centred practice on the Markham Centre Campus." With an emphasis on collaboration and connection as highlighted in the **AMPD 50+ Strategic Plan** and building upon the current BFA in Integrative Arts, the CT-Markham program will facilitate potential collaborations and opportunities for students working at both campuses, while providing distinctive learning outcomes and opportunities defined by its location on the Markham Campus.

This proposal emerges from extensive work and consultations over the past year by the AMPD Markham Program Working Group, which included members from all current departments in the School and conducted consultations with departments within the School and beyond. To further support the program, a review of comparator programs (both at York and other institutions) was commissioned from Higher Education Strategy Associates (HESA) with a report submitted in October 2021. This report helpfully highlights the distinctive aspects of the current program proposal, including its explicit commitment to ethical community engagement and critical entrepreneurship in technologies an explicit decolonial lens.

As a School that recently celebrated its 50th anniversary, the existing programs and areas in AMPD are well-recognized and established within their respective disciplines. AMPD programs continue to recruit students pursuing careers across the respective fields within

the arts, design, and media at the highest level. At the same time, there is broad recognition that the underlying methodologies of the creative disciplines have diverse applications in fields beyond traditional artistic practices. The CT-Markham program is designed therefore to prepare students for evolving careers at the intersection of these changing domains and to equip them with skills, experiences, and opportunity to work at these intersections. To this end, CT-Markham students develop specific skills (e.g., "tech-knows"), while also learning and building connections across these areas within structures. As creative and computational economies evolve through advances in AI, social data, and communicative labour, both technical acumen and social knowledge will be necessary to successfully navigate rapidly changing domains of art and creative practice. This program aims to prepare students for a variety of careers – both existing and still emerging – within the creative industries.

In this sense, the proposed CT-Markham program meets not only the key UAP priorities in **21st-Century Learning**, but also **Knowledge for the Future**, specifically the desire to maximize "our impact by building on the success of Innovation York to expand student, faculty, and community access to entrepreneurial programming and to increase our innovation activities." As Paul Valéry wrote, "It takes two to invent anything. The one makes up combinations, the other choses." The program takes up an explicit mandate to develop ethical entrepreneurship that centres ethical technology through a decolonial lens such that its graduates can perform in both these roles: to generate new work; and to assess these creations critically and reiteratively.

To this end, the program thus advances the University's larger aims to **Answer the Call** through contributions to the United Nations Sustainable Development Goals, in particular: SDG 8 (Decent Work and Economic Growth) and its emphasis on sustainable cultural development, creation, and related tourism; SDG 9 (Industry, Innovation, Infrastructure) and its promotion of cooperative enterprise models, among others; and SDG 11 (Sustainable Cities and Communities) with its call to safeguard and promote diverse cultural heritage. In its unique combination of critical entrepreneurship, ethical deployment of technical skills and work-integrated learning, the BFA in Creative Technologies-Markham will provide cohorts of students will prepare new cohorts of students to navigate rapidly changing fields and career opportunities to come.

I therefore strongly support this proposal and am grateful to the colleagues who have proposed these major modifications.

Sincerely,

S. Bay-Cheng

Sarah Bay-Cheng
Dean

YORK UNIVERSITY LIBRARIES

Office of the Dean

516 Scott Library
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5601
F 416 736 5451
www.library yorku.ca

Memorandum

To: **Michael Darroch**

From: Joy Kirchner, Dean of Libraries

Date: November 4, 2021

Subject: Specialized BFA in Creative Technologies Library Support

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York University Libraries (YUL) is strongly positioned to support the curriculum and research needs of students and faculty of the specialized BFA in Creative Technologies at the Markham Campus. As noted in the Statement of Library Support, YUL provides access to an extensive array of expertise, resources and services that support the professional engagement and experiential education of students and faculty in this program. I draw your attention to the new Markham Campus Centre Library (MCCL) spaces that will provide immersive, technology enhanced media creation spaces for students to practice and experience their learning. I also highlight YUL's curriculum integration offerings, digital literacy programs, data management and data visualization offerings and other specialized programming offered through our digital scholarship centre.

We look forward to contributing to the success of students and faculty in the specialized BFA in Creative Technologies major for the Markham Campus at York University.

cc: Patti Ryan, Director, Content Development and Analysis
Jack Leong, Associate Dean of Libraries, Research and Open Scholarship
Andrea Kosavic, Associate Dean, Digital Engagement and Strategy
John Dupuis, Scholarly Publishing Librarian

Specialized BFA in Creative Technologies
Library Statement of Support

October 2021

This statement of library support for the proposed major modification of the BFA Integrative Arts program to become the new Markham Campus Specialized BFA in Creative Technologies has been prepared in accordance with the guidelines outlined in the Quality Assurance Framework as set out by the Ontario Universities Council on Quality Assurance. It describes some of the services and levels of support that York University Libraries (YUL) will be able to provide to students and faculty at the Markham Centre Campus. YUL supports all programs through immersive spaces, diverse collections, instructional services, research assistance, access to knowledge resources, expertise with research dissemination and adaptive services.

This new Specialize BFA in Creative Technologies program will focus on critical entrepreneurship, blending creative practice with theory and technical expertise and experiential learning. The program will emphasize creative methodologies, interdisciplinarity in the arts, engagement with the community and creative industries and combining arts and technical skills with an emphasis on social justice. York University Libraries embraces this approach with Markham Centre Campus Library (MCCL) programs and services that support multimodal learning through program-integrated offerings of technology, space and expertise. MCCL embeds library instruction and proficiency with immersive spaces including media capture and editing suites, a makerspace, VR capabilities, a gaming lab, and a visualization wall, all developed to support creative collaborations for teaching, learning, research and community partnerships. From a rich and diverse collection of print and electronic resources and tools, to one-on-one consultation services, instructional sessions, co-curricular offerings and group study spaces, the Libraries are well-positioned to support student success in what promises to be a rich, intensive program of study.

An overview of relevant York University Libraries services and resources for students and faculty is provided in subsequent sections.

Library Curriculum Integration for Specialized BFA in Creative Technologies

Information Literacy (IL) encompasses the skills to find, retrieve, evaluate, use and produce academic and creative work. It enables students to participate fully in a university environment and a disciplinary culture. IL integration strengthens alignment with Degree Level Expectations and the seven defined categories of broad knowledge and skills integral to Ontario's Quality Assurance Framework.

Scaffolding IL instruction is most effective when organized at the program level as it eliminates duplication, improves assignment outcomes, and enables students to apply their learning. IL instruction

spans many areas including digital methods, digital tools, data visualization, copyright, privacy and security. Based on ACRL's Framework for IL for Higher Education, and years of experience, we suggest integrating library instruction into the introduction to the discipline course PANF 1100 3.0 Creative Methodologies I, the research methods course FA/PANF 2XXX 3.0 Decolonizing the Arts and the capstone courses FA/PANF 4XXX 6.0 Individual Capstone or FA/PANF 4999 6.0 Collaborative Capstone.

Instructors are encouraged to take advantage of dedicated, in-class sessions that can be tailored to course material or assignments. A wide range of programming is available, including digital and information literacy, blended learning modules, co-curricular programming, open educational resources and student seminars. In-class sessions should be organized and booked in advance of each semester's offerings, and requests can be submitted at https://classrequests.library.yorku.ca/

Two interesting opportunities for collaboration between the new program and the Libraries present themselves for this program. First of all, the facilities at the Digital Scholarship Centre and the various immersive spaces described below would be natural fits for the planned 1.0 micro-credit course that are planned. For example, the visualization wall or gaming lab could easily be the focus of individual micro-credit courses. The second opportunity could involve partnering with the Libraries for courses on topics such as copyright or intellectual property. The opportunities here could also include integrating library expertise in existing courses or creating new courses to focus on these topics.

Digital Scholarship Centre and Specialized Programming

To discuss curriculum integration in the areas of digital scholarship, digital cultures and pedagogy, data management, open education, or scholarly publishing, YUL welcomes faculty to contact the Digital Scholarship Centre. The Digital Scholarship Centre (DSC) at York University Libraries houses knowledge in a range of digital tools and methods for web crawling and scraping, data cleaning, data curation, text processing and analytics, social graph analysis, data visualization, and linked open data applications, with an emphasis on sustainable, low-barrier approaches and open-source tools. The Digital Scholarship Centre draws expertise from a variety of departments within York University Libraries. The Digital Scholarship Infrastructure (DSI) supports students and faculty seeking assistance with digital scholarship and digital humanities projects, open repositories, digitization best practices, digital preservation, research project design, eLearning, and Open Educational Resources. The department also hosts scholar-led journals and can also consult on the development of course assignments working with unique digital collections stewarded by the Libraries. The Open Scholarship department (OS) supports student and faculty needs around open access publishing, retaining author rights, improving research visibility, research data management, and adopting open science workflows. The department also hosts a data services team that can provide guidance on how to find and evaluate aggregated data and microdata sources for research projects as well as on how to document, publish, and preserve research data objects.

Immersive Spaces at Markham Centre Campus Library

The **Media Creation Spaces at MCCL** offer equitable access to library expertise and media creation spaces including audio and video recording equipment, audio-visual media creation spaces and editing suites, portable virtual reality headsets, and workstations for hands-on digital media production work. The Digital Scholarship Centre offers resources for faculty members seeking to integrate audio- and video-based assignments and activities into their courses and enables media literacy skills development in support of coursework and capstone projects. In addition, it serves faculty needs for equipment and recording space as they are developing their own eLearning Open Educational Resource materials.

The **Makerspace at MCCL** is a site for critical making, offering a research and learning environment where students and researchers have access to 3D printers, electronic textiles, sewing machines, electronics and robotics. This large space is configured as a teaching environment and can accommodate in-class learning. Library makerspace programming fosters key digital, social, and cross-disciplinary fluencies such as critical and creative thinking, research skills, project planning and management, professional communication, the ability to work in multidisciplinary teams, and adaptability to new contexts and circumstances.

The **Visualization Wall, Gaming Lab and Virtual Reality (VR) Lab** are in a single dynamic, configurable space, with the Visualization Wall augmenting VR and gaming experiences. The Visualization Wall, with a massive viewable area of 28 x 14 feet, allows for enhanced research and teaching applications such as the visualization of large data sets, engagement with sophisticated software platforms, and detailed viewing and modelling of complex structures. The gaming capabilities of the space are leveraged to factor in backwards compatibility for legacy equipment for instructors and allow multiple users to concurrently engage with the visualization wall in a variety of configurations. This infrastructure enables faculty to use VR as a teaching tool by narrating a student's VR experiences as projected on the visualization wall to a class of students. VR applications intensify connection to place and create an extraordinary opportunity to build empathy through lived experiences. Library programming includes introductory instruction in the creation of VR environments.

Library Resources

York University Libraries have robust and multidisciplinary collections that are responsive to emerging curriculum and research needs. We have adopted an "e-preferred" approach for new content, meaning that any requests for new titles will be fulfilled with e-book purchases whenever available or affordable, and with as few access restrictions as publishers will allow. YUL also participates in consortia such as the Canadian Research Knowledge Network (CRKN) and the Ontario Council of University Libraries (OCUL) Scholars Portal, both of which provide access to a growing collection of electronic content that can be discovered through OMNI, our primary search interface.

Print materials relevant to the program can also be found via OMNI, and York community members can arrange to have materials held at any of our libraries. Aside from York's collection, our partnership with the OMNI network provides students and faculty members with access to print materials housed at any of our 14 partner institutions across Ontario.

Last updated: 21/01/2020

Interlibrary Loans (RACER) Interlibrary loan and document delivery options are available through RACER for any additional information needs that may come up. There is no limit to the number of articles that a student or faculty member may order through RACER per year, and these are delivered to the desktop, free of charge. Books can also be requested through this system free of charge. Registration and requesting is available from: http://www.library.yorku.ca/cms/resourcesharing/services-for-york-faculty-and-students/illrequestform/.

Apart from print and electronic materials, York University Libraries hosts a large collection of government documents and microfilms, a wide range of audio-visual resources through the Sound and Moving Image Library, a broad collection of maps, and a rich range of primary source material at the Clara Thomas Archives & Special Collections including manuscripts, rare books and primary source materials to support research and learning by the university's faculty, students, and a community of international scholars. Archivists will host subject-specific workshops and provide individual consultations on archival material.

Open Content

As part of its commitment to Open Access and Open Education, York University Libraries is placing increased emphasis on openly licensed and public domain materials for teaching and learning, including sources of open data. In addition, an increasingly wide range of Open Educational Resources (OER) are available through York University Libraries, and we have a guide to finding and evaluating these resources at https://researchguides.library.yorku.ca/OER.

The Libraries is also pleased to provide support for members interested in creating OER for the benefit of the Specialized BFA in Creative Technologies program. Complementing our own Pressbooks publishing platform for open textbooks, we encourage faculty members to explore and use eCampusOntario's OER tools, including their Pressbooks platform and their H5P platform for creating open, interactive course content. Learn more about eCampusOntario's commitment to open education at https://www.ecampusontario.ca/open-education-resources/.

Relevant Databases, Indexes, and Data Sources

Many of the courses in the program will focus on diverse topics of video and sound editing, visual and sound effects, 3D printing, coding, arts entrepreneurship, decolonization, collaboration, digital media technologies. To inform their work, students will require access to scholarly books and articles, audio, video and images, technical manuals, mainstream and alternative news sources, archives, and sources of computer and technology data. The breadth of the program spans many disciplines, all of which can be addressed with elements of the York University Libraries collections or with openly licensed content.

The Libraries provide access to hundreds of thousands of journals, the vast majority of which are accessible online. Articles are discoverable through the Omni library catalogue or through the Libraries' extensive set of article databases such as Art & Architecture Source, Communication Source, ACM Digital Library and Design and Applied Arts Index, among others. Students in the Specialized BFA in Creative Technologies program will also benefit from a range of more domain-specific tools and platforms including ARTStor, Grove Art Online and Naxos Music Library.

Last updated: 21/01/2020

Program-Related Research Guides

York University Libraries publishes research guides related to disciplines and topics addressed by York programs. Existing guides of interest to this program are:

Digital Media: https://researchguides.library.yorku.ca/c.php?g=679789
Computer Science: https://researchguides.library.yorku.ca/cse
Science and Technology Studies: https://researchguides.library.yorku.ca/sts
Art, Architecture and Design: https://researchguides.library.yorku.ca/artarchitecturedesign
Film Studies: https://researchguides.library.yorku.ca/film
Music: https://researchguides.library.yorku.ca/music
Digital Scholarship and Digital Humanities: https://researchguides.library.yorku.ca/dsdh

Email, Chat, and Consultation Services

In-person assistance with research, citation and other information is readily available from York University Libraries. Currently, online support is available through text messaging, email or through our online chat or drop-in zoom service. Chat and reference support services are accessible every day, with some reduced availability in the quieter Spring and Summer terms. Post-pandemic, librarians and staff will be available onsite at all branches, to provide tailored support for graduate students.

Students in this program may also take advantage of our consultation service, where individuals or groups meet with a subject specialist or data services librarian to discuss specific, assignment- or research-related questions about information sources, search strategies, data storage and preservation questions, data analysis and visualization tools, and more. These consultations are available at regular hours throughout the week, and can be booked online at https://www.library.yorku.ca/web/ask-services/book-a-consultation-with-a-librarian/

Conclusion

York University Libraries welcome the opportunity to support the curricular and research needs of students and faculty in the proposed Specialized BFA in Creative Technologies. Our external partnerships program-integrated offerings of technology, space and expertise, and collaborative, multi-institutional collection building and the many programs and services mentioned above will contribute to the success of the [insert program name here] in the years to come.

Last updated: 21/01/2020

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FACULTY OF LIBERAL ARTS AND PROFESSIONAL STUDIES

Department of Communication and Media Studies

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T 416 735 4262
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To Whom It May Concern:

I am writing this letter on behalf of the Department of Communication and Media Studies in support of the Creative Technologies Program proposed by the Faculty of Arts, Media and Performance Studies.

The Department of Communication and Media Studies is proposing a stream in Social Media and PR at the Markham campus. The Social Media and PR committee had two consultation meetings representatives of the Creative Technologies Program on November 24, 2020 and on Oct. 22, 2021. It was clear in these meetings that while Social Media & PR and Creative Technologies have their own distinct curricular goals, there are some significant and potentially fruitful areas of synergies including: social justice and decolonization; digital and computer literacy; community-building as key to experiential education; and training students through projects to work in interdisciplinary teams.

We have already identified several courses in our respective programs that would benefit from cross-listing and co-teaching particularly in digital storytelling, community-based projects, professionalization, and capstone. Overall, we expect that a significant number of Social Media and PR students will be interested in taking Creative Technologies courses to round up their professional specialization as they pursue media and communication careers in public policy and public art, activism, and creative industries.

We fully support the development of the Creative Technologies Program.

Sincerely,

Ganaele Langlois

Note: Appendix 3 - Course Proposals is not included in this document but is available upon request.

YORK UNIVERSITY

UNDERGRADUATE DISCIPLINARY CERTIFICATE PROPOSAL

Certificate in Creative Writing Across Contexts

(Department of English, Glendon College)

1. Introduction

PREAMBLE: Upon receiving a proposal for an 18-credit "certificate of proficiency" in creative writing (at the time entitled "Experiential Certificate in Creative Writing") in the Winter of 2020, in May Senate ASCP provided the English Department with comments as well as recommendations—specifically, to change it into a 24-credit "disciplinary certificate" of creative writing. Building on Senate ASCP's questions, concerns, and recommendations, the Glendon English Department has revised its conception of a disciplinary certificate in creative writing, as the "Certificate in Creative Writing Across Contexts" (CCWAC). Although Vice-Provost Alice Pitt suggested that the revised proposal could be resubmitted directly to ASCP without a renewed process of vetting by CASTL, the Glendon English Department believes that its complete reconceptualization of the Certificate merits a renewed process to allow the full extent of collegial input on the proposal which follows the template for new Undergraduate Certificate Proposals.

1.1. The Certificate in Creative Writing Across Contexts (CCWAC) is a disciplinary certificate that will be attained upon the successful completion, with a minimum cumulative B- average (70%) on the 4.0 GPA scale,[1] of 24 credits of creative writing courses offered by Glendon's Department of English. The Certificate courses are open to all interested students; however, GL/EN 4800 is open only students who have completed prior Certificate courses with a minimum B- average. The Certificate is composed of two 6-credit and four 3-credit courses. Students who have completed the 24 credits offered by the Department of English will have demonstrated proficiency in both the analysis and production of key literary genres and multimodal forms; will have thoughtfully engaged creative writing issues related to a diversity of media, communities, and cultures in critical and creative forums; and will have acquired transferable skills as community leaders within cultural fields.

1.2. The certificate's name reflects the uniqueness of the program of study being proposed; as a two-year disciplinary certificate, the CCWAC is unique in its emphasis on a diversity of traditional and innovative writing techniques across genre and media and in connection with unique features of Glendon's campus and community.

2. General Objectives of the Undergraduate Certificate

2.1. The key learning expectations of the CCWAC are to educate students about the practice of creative writing, through an intense program of learning fundamental and advanced

[1] Since the Certificate is anticipated to be launched in 2022, the minimum average in the first year will be B (70%) on York University's 9.0 GPA scale.

writing skills in dialogue with a diversity of media, platforms, cultures, and social issues. The Certificate is built in concert with Glendon's reputation as a dynamic site for intersectional liberal arts education that emphasizes student-centred and community-focused learning experiences. The Certificate positions creative writing as a discipline that exceeds solitary creative action, framing it instead as a flexible practice that is inherently interdisciplinary, multimodal, and collaborative. It reflects Glendon's core values, as articulated in the 20202025 Academic Plan, in that it "engages a diversity of cultures and lived experiences;" "offers transferable and marketable skills for career-readiness;" and prepares students to "tackle the demanding global and transnational challenges of our time,"[2] with an emphasis on digital literacy, environmental issues, and social inequalities.

The learning outcomes of the Certificate are developed variously through the six courses and include: development of skills in writing across multiple genres (poetry, fiction, creative nonfiction, and multimodal forms); development of writing skills across media and platforms; engagement with writing's relationship to cultural, environmental, and community-based issues; creation of opportunities for collaboration across disciplinary fields; formation of students as outward facing and future-oriented learners via community-based engagement; professional networking with literary practitioners who are authorities in the field.

All of the courses will support, develop, and apply established and innovative pedagogical strategies for flexibility across a variety of modes of teaching and course delivery in and out of the classroom, including engagement with Glendon's Digital Media Lab and outdoor green spaces, extensive peer-to-peer workshopping, exchange with cultural communities, and interaction with established literary practitioners. Only one 6-credit course (GL/EN 4800) will be open exclusively to Certificate-students. With its focus on intensive workshopping for the creation of a unified and coherent long-form work and regular involvement with oncampus literary events, GL/EN 4800 will only be open to students who have completed or are near the completion of all other Certificate requirements.

2.2. Aligned with Glendon's mission to redefine the Liberal Arts in the 21st century, to cultivate a student-centered campus and community experience, and to promote crosscultural dialogue, the Certificate comprises a range of courses that broaden student perspectives on creative writing by fostering practices that cross genres, cultures, and media.[3] As such, it is intended to open pathways for students who wish to pursue careers in cultural fields, and to further enhance Glendon's commitment to an educational experience that broadens students' perspectives and abilities as writers, adopts different approaches to diverse creative practices, and trains students' minds to be agile and prepared for creative work. This credential will draw on Glendon's small size and intimate setting, fostering both a sense of community and the skills needed to succeed in creative environments with flexible methodologies, attention to cross-cultural exchanges, and digital competency.

[2] See "Glendon Academic Plan 2020-2025." Jan. 10, 2021.

[3] See "Glendon Academic Plan 2020-2025." Jan. 10, 2021

3. Need and Demand

3.1. York University offers no other certificates that bear any similarity to this proposed disciplinary certificate. Although a Creative Writing Program exists at York University, the Certificate at Glendon will not duplicate but rather complement the course offerings at the main campus. The Certificate will be open to all York students, including Creative Writing students (majors and minors). The main differentiating points between Glendon's Certificate and the Creative Writing Program are in the scope of their respective learning outcomes, modes of delivery, and campus focus. Whereas the Creative Writing program is comprehensive with a wide variety of courses and intensity of preparation and is delivered mainly through a classroom focus, Glendon's Certificate is intended to complement students' areas of study by providing them with a concrete set of tools and experiences (See 4.1 and Appendix 1). The Certificate honours Glendon's commitments to cross-cultural dialogue and "to model and promote social justice, Indigenization, decolonization, anti-racism, and equity"[4] (GL/EN 3802 3.0 Writing Diversity); it engages the campus' extraordinary resources offered by the Glendon Digital Media Lab (GL/EN 3806 6.0 Digital Media and Publishing and GL/EN 3800 3.0 Multimodal Writing) and on-campus green spaces such as Glendon's

Community Garden and the Glendon Forest Trail (GL/EN 3801 3.0 Writing the Environment); it augments the infrastructure provided by its existing reading series (GL/EN4800 6.0 Writing and Community). With the exception of GL/EN 2800, all courses in the proposed Certificate capitalize on Glendon's unique campus, intimate spaces, and small class sizes to promote curricular and extra-curricular activities that will enrich students' learning experiences.

3.2. The consistent interest of Glendon students in creative writing courses every year despite the absence of a formal major or minor or certificate towards which they could have counted them attests to existing student needs, while recent polling results among Glendon alumni reveal a community interest in cultural events such as public readings and a literary journal, which would be an additional component of the institution of the Certificate. Reference librarian Sarah J. Coysh has already extended her support for the development of a new literary journal that will be hosted via the Frost library. Certificate outputs like these meet alumni demand and enrich student experiences at Glendon. Moreover, they will allow students to make significant contributions to life at Glendon and, in turn, prepare them for leadership in cultural fields.

3.3. Whereas it is difficult to predict the numbers admitted in any year, past enrollment for creative writing courses at Glendon suggests that we can realistically expect between twelve to twenty new students every year. In the first year of the Certificate's implementation (Fall 2022) we may receive fewer than the desired twelve, but with a more concerted recruitment strategy in coordination with Glendon's Recruitment Office, we expect the Certificate to attract more applicants in future years. The Certificate's pedagogical model and course offerings are best suited to a cohort entering the Certificate in any given year that is no greater than twenty students—a number that allows for the most effective workshopping in a classroom setting.

[4] See "Glendon Academic Plan 2020-2025." Jan. 10, 2021

4. Curriculum, Structure and Learning Outcomes

4.1. The Certificate in Creative Writing Across Contexts is composed of six mandatory courses whose student learning outcomes are derived from combined class and community focused learning. Please see Appendix 1 for the table of learning outcomes and the curricular map of the Certificate.

4.2. The methods and criteria for assessing student achievement in the six courses of the Certificate are directly related to the learning outcomes defined in Appendix 1. See Appendix 3 for the six course proposals (GL/EN 2800, GL/EN 3800, GL/EN 3801, GL/EN 3802, GL/EN 3806, GL/EN 4800) containing their respective assessment schemes and criteria.

4.3. The Certificate in Creative Writing Across Contexts is composed of the following six mandatory courses created in the Fall of 2020 and Winter of 2021 by the Department of English at Glendon for the purpose of this Certificate:

GL/EN 2800 3.0 Introduction to Creative Writing
"This course introduces students to the root genres of creative writing, including creative nonfiction, poetry, and fiction. Students will explore the core principles of each genre by studying model texts and learning to produce short stories, poems, and narrative nonfiction."

GL/EN 3800 3.0 Multimodal Writing
"This course studies the field and practice of creative writing through the lens of multimodality, enabling students to explore how writers can expand their abilities by creating work at the intersection of genres, discourses, and media."

GL/EN 3801 3.0 Writing the Environment
"This course enables students to study and create poetry and prose in dialogue with local and global environmental issues. In particular, this course utilizes Glendon's unique outdoor green spaces to encourage students to write with a sense of their positionality within the immediate environment."

GL/EN 3802 3.0 Writing Diversity: Issues in Creative Writing
"This course studies the field and practice of creative writing through the lens of diversity with an emphasis on recent and ongoing discussions and debates."

GL/EN 3806 6.0 Digital Media and Publishing
"This experiential course gives students the opportunity to develop skills in writing, editing and digital production that will allow them to design and produce a digital arts and culture magazine."

GL/EN4800 6.0 Writing and Community
"This course engages students with two distinct literary communities: the smaller, intimate personal community of their peers, and the larger, national and international community of published authors, through participation in literary workshops, events, and critiques of submitted material."

4.4. The Department of English will offer 2 FCEs of creative writing courses every academic year, on a two-year cycle, thereby ensuring that any student can complete the Certificate within two years. The basic two-year rotation assumes that four 3-credit courses will be offered in year A, while the two full-year courses will be offered year B, thereby completing the Certificate for a cohort. The predictable and regular rotation of courses required for the Certificate will allow Glendon's recruiters and academic advisors to notify and attract students into the Certificate, and the students themselves to plan their progress through the Certificate within two years. Students can equally choose to take a longer time to complete the Certificate, as long as they are aware of the rotation of courses.

5. Admission Requirements

5.1 The following are the proposed admission requirements for each of the distinct Concurrent and Consecutive options for the Certificate:

Concurrent Option
Eligible students for the Concurrent option of the Disciplinary Certificate in Creative Writing are students who:

1. have been admitted to and registered in an existing undergraduate Honours degree program at Glendon or any Faculty at the University; and
2. have completed at least 18 credits of within their York undergraduate degree program or at another recognized / accredited post secondary institution

Consistent with the admissions requirements for undergraduate BA programs housed at Glendon, students need the following to be eligible for this disciplinary certificate in creative writing:

- Ontario Secondary School Diploma (OSSD) or equivalent.
- A minimum of six 4U or 4M courses, including 4U English (ENG4U) or FRA4U for applicants from French-language high schools.

Consecutive Option
Eligible students for the Consecutive option of the Disciplinary Certificate in Creative Writing are:

1. those who have successfully completed a university undergraduate degree program at a recognized / accredited post-secondary institution
2. applicants without prior university education admitted to the certificate program through Glendon's mature student application

These requirements are appropriately aligned with the certificate's learning outcomes.

6. Resources

6.1. Faculty resources: Once established, the CCWAC will be overseen by a coordinator whose title will be the Glendon Writer-on-the-Grounds, a position envisaged and recommended by the English Program's CPR of 2017 and the Glendon Principal's Office. The Writer-on-theGrounds will be a decanally-appointed position, with an annual stipend. The successful candidate should not only be an active, publishing author, but also possess teaching and administrative experience at the undergraduate level. The Writer-on-the-Grounds will direct and develop the CCWAC and

have the capacity to expand course programming and community events. In addition to coordinating the Certificate, the Writer-on-the-Grounds will teach a number of creative writing courses; thus, the successful candidate should have a skillset attuned to the Certificate's curriculum.

The Writer-on-the-Grounds' duties during the academic year will include:

a) Teaching at least 1 FCE of creative writing courses in the Certificate;
b) Reviewing student application portfolios as part of Previous Learning Assessment Review for equivalency of GL/EN 2800 (See Appendix 2);
c) Consulting with Certificate students about their progress in Certificate courses or involvement with community events;
d) Recruiting authors and consulting with the Chair of English regarding their hire as creative writing teachers in the Certificate;
e) Selecting, contacting, and scheduling author visits to Glendon for creative writing classes and community events;
f) Coordinating with the GL/EN 3806 instructor and Frost Library to ensure the successful annual publication of the CCWAC-affiliated literary journal.

6.2. Laboratory facilities: Notable requirements for the Certificate are related to equipment, computer facilities, and professional software enabling the design and publication of GL/EN 3806's digital literary journal as well as the creative works in GL/EN 3800. Dependent on the instructors for these courses, access to equipment in the Glendon Media Lab will likely be required, including its Macs and high-performance PC's, audio equipment (Yeti Microphones, Audiotechnica Microphones, Zoom H4n Handy Recorders), learning resources related to digital storytelling and podcasting, Adobe Creative Cloud Software (especially Illustrator, InDesign, and Photoshop), and audio editing software such as Audacity or Logic Pro X.

6.3. Space: Seminar classrooms are useful for normal instruction periods, but on the days when authors visit to give readings, a different, larger space conducive to such social events, such as the Senior Common Room or the Fireside Room or Glendon Theatre, may be requested. Dependent on the instructor, Glendon's outdoor green spaces such as the Glendon Community Garden and Glendon Forest Trail would likely be utilized for GL/EN 3801.

APPENDIX 1
Certificate in Creative Writing Across Contexts
Program Level Expectations and Student Learning Outcomes

A. Depth and Breadth of Knowledge

A1. Recognize origins and models of creative writing across literary, historical, and cultural traditions and precedents
A2. Distinguish the genre conventions, techniques, and elements of craft in prose, poetry and multimodal forms
A3. Analyze the needs and expectations of different audiences and venues
A4. Identify the platforms, media, and digital tools used by writers
A5. Identify the processes associated with peer-to-peer workshopping
A6. Identify and analyze pressing social, environmental, and cultural issues

A7. Investigate and critically assess the economic, professional, and literary standards of the publishing industry

B. Knowledge of Methodologies

B1. Investigate social, historical, and cultural methods of literary production
B2. Compare and contrast conventions of writing across literary, historical, and cultural traditions and precedents
B3. Investigate best practices for peer-to-peer workshopping
B4. Acquire competency with best practices for giving and receiving editorial feedback
B5. Acquire competency with image, text, and sound editing software
B6. Acquire competency with digital and analog media
B7. Acquire an understanding of manuscript preparation and submission
B8. Acquire skills as cultural leaders and community organizers within literary contexts

C. Applications of Knowledge

C1. Produce prose, poetry, and multimodal works in multiple genres and forms
C2. Produce prose, poetry, and multimodal works in digital and analog media
C3. Produce prose, poetry, and multimodal works that engage critically with social, cultural, and environmental issues
C4. Produce prose, poetry and multimodal works that respond to the needs of different audiences and venues
C5. Present work in the context of writing workshops
C6. Comment constructively on the work of others in the context of writing workshops
C7. Use image, text, and sound editing software to produce and edit work
C8. Organize and run literary events in digital and analog formats
C9. Produce and manage an online literary journal
C10. Interact with established literary practitioners

D. Communication Skills

D1. Write creatively across a variety of modes and genres, including prose, poetry, and multimodal forms
D2. Present orally on social, historical, and cultural methods of literary production
D3. Write critically on social, historical, and cultural methods of literary production D4. Write critically and creatively to meet the needs and expectations of different audiences and venues
D5. Discuss and appraise conventions of creative writing across literary, historical, and cultural traditions and precedents
D6. Constructively appraise peer work with clear critiques and constructive feedback in oral and written contexts
D7. Develop competency with public speaking within literary contexts, including community events
D8. Network with peers and established literary practitioners

E. Awareness of the Limits of Knowledge

E1. Reflect on the relationship of writing and publishing to social issues, including social justice, Indigenization, decolonization, anti-racism, and equity and inclusion E2. Reflect on the ways that writing responds to and incorporates digital media and technologies
E3. Address the needs and limitations of different audiences and venues

E4. Use instructor and peer feedback to reflect on and improve writing of poetry, prose and multimodal works
E5. Use knowledge gleaned from literary events, visiting authors, and other industry professionals to reflect on and improve writing, editorial and professional practices

Certificate in Creative Writing Across Contexts
LEARNING OUTCOMES - CURRICULUM MAPPING

Program Level Expectations	COURSES					
Student Learning Outcomes	**2800 3.0 Intro to CW**	**3800 3.0 Multimodal**	**3801 3.0 Writing Diversity**	**3802 3.0 Writing Environment**	**3806 6.0 Digital Media and Publishing**	**4800 6.00 Writing and Community**
A Depth and Breadth of Knowledge						
A1. Recognize origins and models of creative writing across literary, historical, and cultural traditions and precedents	X	X	X	X	X	X
A2. Distinguish the genre conventions, techniques, and elements of craft in prose, poetry and multimodal forms	X	X	X	X	X	X
A3. Analyze the needs and expectations of different audiences and venues	X	X		X	X	X
A4. Identify the platforms, media, and digital tools used by writers		X	X	X	X	X
A5. Identify the processes associated with peer-to-peer workshopping			X		X	X
A6. Identify and analyze pressing social, environmental, and cultural issues in literary contexts						
A7. Investigate and critically assess the economic, professional, and literary standards of the publishing industry						
B Knowledge of Methodologies						

B1. Investigate social, historical, and cultural methods of literary production	X	X	X	X	X	X
B2. Compare and contrast conventions of writing across literary, historical, and cultural traditions and precedents	X	X	X	X	X	X
B3. Investigate best practices for peer-to-peer workshopping	X	X		X	X	X
B4. Acquire competency with best practices for giving and receiving editorial feedback	X	X		X	X	X
B5. Acquire competency with image, text, and sound editing software		X			X	
B6. Acquire competency with digital and analog media		X			X	
B7. Acquire an understanding of manuscript preparation and submission			X		X	X
B8. Acquire skills as cultural leaders and community organizers within literary contexts			X		X	X

Certificate in Creative Writing Across Contexts
LEARNING OUTCOMES - CURRICULUM MAPPING

Program Level Expectations	COURSES					
Student Learning Outcomes	**2800 3.0 Intro to CW**	**3800 3.0 Multimodal**	**3801 3.0 Writing Diversity**	**3802 3.0 Writing Environment**	**3806 6.0 Digital Media and Publishing**	**4800 6.00 Writing and Community**
C Applications of Knowledge						
C1. Produce prose, poetry, and multimodal works in multiple genres and forms	X	X		X		X
C2. Produce prose, poetry, and multimodal works in digital and analog media	X	X		X	X	X
C3. Produce prose, poetry, and multimodal works that engage critically with social, cultural, and environmental issues	X	X	X	X	X	X
C4. Produce prose, poetry, and multimodal works that respond to the needs of different audiences and venues	X	X	X	X	X	X
C5. Present work in the context of writing workshops	X	X		X	X	X

C6. Constructively critique on the work of others in the context of writing workshops	X	X		X	X	X
C7. Use image, text, and sound editing software to produce and edit work		X			X	
C8. Organize and run literary events in digital and analog formats					X	X
C9. Produce and manage an online literary journal					X	
C10. Interact with established literary practitioners	X	X	X	X	X	X
D Communication Skills						
D1. Write creatively across a variety of modes and genres, including prose, poetry, and multimodal forms	X	X	X	X		X
D2. Present orally on social, historical, and cultural methods of literary production	X	X	X	X		X
D3. Write critically on social, historical, and cultural methods of literary production		X			X	

Certificate in Creative Writing Across Contexts
LEARNING OUTCOMES - CURRICULUM MAPPING

Program Level Expectations	COURSES					
Student Learning Outcomes	2800 3.0 Intro to CW	3800 3.0 Multimodal	3801 3.0 Writing Diversity	3802 3.0 Writing Environment	3806 6.0 Digital Media and Publishing	4800 6.00 Writing and Community
D4. Write critically and creatively to meet the needs and expectations of different audiences and venues		X			X	X
D5. Discuss and appraise conventions of creative writing across literary, historical, and cultural traditions and precedents	X	X	X	X	X	X
D6. Constructively appraise peer work with clear critiques and constructive feedback in oral and written contexts	X		X	X		X
D7. Develop competency with public speaking within literary contexts, including community events	X	X		X	X	X

D8. Network with peers and established literary practitioners	X	X	X	X	X	X
E Awareness of the Limits of Knowledge						
E1. Reflect on the relationship of writing and publishing to social issues, including social justice, Indigenization, decolonization, anti-racism, and equity and inclusion			X		X	X
E2. Reflect on the ways that writing responds to and incorporates digital media and technologies		X			X	
E3. Address the needs and limitations of different audiences and venues					X	X
E4. Use instructor and peer feedback to reflect on and improve writing of poetry, prose and multimodal works	X	X	X	X		X
E5. Use knowledge gleaned from literary events, visiting authors, and other industry professionals to reflect on and improve writing, editorial and professional pract	X	X	X	X	X	X

APPENDIX 2
Certificate in Creative Writing Across Contexts

PLAR Requirements for GL/EN 2800 3.0 Introduction to Creative Writing

GL/EN 2800 3.0 Introduction to Creative Writing focuses on the development of fundamental skills in writing across three root genres (poetry, fiction, creative nonfiction). Students who wish to have their previous introduction to creative writing counted, and EN2800 waived as a requirement for the Certificate, must demonstrate the achieved equivalency of that course's learning outcomes by providing: a **1-2 page artist statement** and **a writing sample that contains one short story, one short piece of creative nonfiction and 3-5 poems.**

Applicants are encouraged to submit works that show a range of techniques, subjects, or forms. The submission should show evidence of careful proofreading and editing, with attention to spelling and grammar when used conventionally. The portfolio should illustrate as strongly as possible your original and unique style, including well considered choices about form and structure. The total page length for the entire submission should not exceed twenty pages.

In the artist statement, outline your background as a reader and a writer (emphasizing experiences in workshop settings and skills acquired as a writer), discuss your goals for study in creative writing, and identify at least one author or text that influences your work.

Previous learning assessment and recognition will be evaluated across the following five categories:

1. Statement of Purpose
Goal: The artist statement demonstrates thoughtful ideas and goals, a strong desire to write, and knowledge of fundamental elements of writer's craft.

Point system:
4- Statement demonstrate strong, critical, reflective thoughts and is extremely well written.
3- Statement demonstrates some critical and reflective thoughts and is adequately written
2- Statement demonstrates superficial thoughts and is adequately written 1- Statement demonstrates superficial thoughts and is weakly written.

2. Genres
Goal: Portfolio provides examples of the three genres (poetry, prose, creative nonfiction)

Point system:
3- Examples of all three genres provided
2- Examples of two genres provided
1- Examples of one genre provided

3. Composition Skills (Conventions and Organization)
Goal: Writing shows understanding and application of standard English composition requirements (grammar, mechanics, and readability).

Point system:
4- Writing demonstrates strong composition skills. There are few grammar, mechanical, and organizational errors and pieces read fluently and effortlessly.
3- Writing demonstrates adequate composition skills. Errors in grammar, mechanical, and organizational errors do not impair readability, but pieces may not read fluently and effortlessly.
2- Writing demonstrates some composition skills. There are some errors in grammar, mechanical, and organizational and not all pieces read fluently.
1- Writing demonstrates weak composition skills. There are multiple/severe grammar, mechanical, and organizational errors that greatly impair reading.

4. Originality/Inventiveness in Content
Goal: Writing shows creative exploration or interpretation of a concept or genre.

Point system:
4- Writing demonstrates inventiveness and risk-taking that goes beyond cliché subject matter (e.g. teenage sadness/depression; relationship drama; school cliques). Writing presents subject matter in a novel and complex way.
3- Most works demonstrate inventiveness and risk-taking but may be presented in a less novel or complex way. If cliché subject matter is used, it is presented in a novel/complex way.
2- Work may show minimal inventiveness or risk-taking in subject matter; often subject matter is cliché and bland.
1- Work shows no inventiveness or risk-taking; all subject matter is cliché and bland.

5. Style & Voice
Goal: Writing shows presence of style: creative use of diction, imagery, details, language, and syntax.

Point system:
4- Writing demonstrates a strong, purposeful sense of style (diction, imagery, details, language, and syntax) and unique voice appropriate to the subject of the work.
3- Writing demonstrates apparent style and voice but may be mechanical or not purposeful.
2- Writing demonstrates minimal/superficial style and voice. Inconsistent usage of stylistic choices in diction, imagery, details, language, and/or syntax.
1- Writing demonstrates little sense of style and voice.

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FACULTY OF LIBERAL ARTS & PROFESSIONAL STUDIES

Department of English

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April 21, 2021

To Whom It May Concern:

The Creative Writing Program at Keele Campus is happy to support the Glendon College Department of English proposal for a "Certificate in Creative Writing Across Contexts." We appreciate the open and transparent communication we've had with the developers of the proposal. They have worked effectively to identify and eliminate or ameliorate possible areas of overlap or competition in the proposed certificate.

The only apparent area of overlap remaining between Glendon's proposed certificate and the Keele CRWR program is the "GL/EN 2800 3.0 Introduction to Creative Writing" Course, which is similar to CRWR's AP/EN 2600 6.0, an introductory course of the same name. We appreciate the need for the certificate to begin with a core training course, and since it is a 3.0 course, we anticipate no significant concerns or competition in that regard.

We find in general that the offerings of CRWR and the proposed certificate are complementary, and we hope students from both campuses will feel encouraged to take courses in both programs. We have also identified several avenues of possible collaboration that we hope can develop between the two programs in the future.

Please do not hesitate to contact me with further questions.

Sincerely,

David B. Goldstein
Coordinator, Creative Writing Program
Associate Professor of English dgolds@yorku.ca

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Memorandum

To: Dr. Igor Djordjevic, Chair
Department of English, Glendon College

From: Joy Kirchner, Dean of Libraries

Date: April 20, 2021

Subject: Library Support for proposed Certificate in Creative Writing across Contexts

York University Libraries are strongly positioned to support the Undergraduate Certificate in Creative Writing across Contexts. This support reflects the strength of collections building and relevant services developed at Leslie Frost Library for English, as well as resources at the Keele campus from which Glendon students may draw. As Sarah Coysh notes in her report, resources to support these students include vast and rich collections of primary and secondary literary resources. The high calibre of these collections is complemented by rich holdings housed in the Clara Thomas Archives & Special Collection where personal papers of writers can be found.

The Libraries recently engaged in extensive restructuring which positions us to continue providing excellent collections along with instructional and consultation expertise, while increasingly leveraging the Libraries' broad and deep expertise and infrastructure to better support emerging needs around resource accessibility, open education, data management and data visualization to name but a few areas.

We look forward to our continued work with the Department of English over the coming years and are excited to support the proposed certificate.

cc: Sarah Coysh, Liaison Librarian for Glendon programs
Patti Ryan, Director, Content Development and Analysis
Tom Scott, Associate Dean of Libraries, Teaching and Learning

Statement of Library Support for the Undergraduate Experiential Certificate of Creative Writing, Department of English, Glendon College.

Date: April 20, 2021

Submitted by: Sarah Coysh, Associate Librarian (Glendon Programs)

INTRODUCTION

This library statement is written in support of the Undergraduate Certificate of Creative Writing across Contexts, Department of English, Glendon College. The Libraries can support this certificate through promoting and providing research dissemination, instructional services, collections, research assistance, access to knowledge resources, and providing adaptive services. The Libraries currently provide a range of online and in-person services that are available to ensure students and faculty can find, evaluate and critically interact with appropriate materials for their coursework and research. In this statement, special research and instruction services catering to undergraduate students will be highlighted, while the sections on collections support should be considered relevant to both students and faculty. The following statement describes the adequacy of library holdings and support provided by York University Libraries for the proposed Certificate of Creative Writing across Contexts.

COLLECTIONS SUPPORT

Librarians have established approval plans with various vendors to ensure the timely acquisition of new publications in the field of Creative Writing. Approval plans are supplemented by individual orders gleaned from reviewing journals, vendor notification programs, faculty requests, and publisher catalogues. Consortial purchases of digital resources, the identification of open-access materials and donations round out collection building. The Libraries support studies in Creative Writing in all of its libraries, but particularly in the Scott Library on the Keele campus and the Frost Library on the Glendon campus. We have strong collections of plays, novels, short stories, literary non-fiction, poetry and writers' guides and as well as works of interest to writers. Consortial purchases of digital resources, the identification of open-access materials, and evaluation of literary donations round out collection building.

Material of use to students and faculty in Creative Writing, can be found in a variety of formats including print, digital, audio, data files, maps and GIS housed in all libraries at York University. The Libraries' extensive collection of moving images (film, DVD, and video) is also useful to students and we are increasingly acquiring a number of subscriptions to streaming audio and video collections.

Specialized literary print and digital encyclopedias, dictionaries, glossaries, handbooks, directories, bibliographies and much more are available in the Libraries' collections. In addition to reference materials in the Scott Library, the Frost Library offers a collection of reference resources. The reference collections at the Scott and Frost libraries contain a number of standard

handbooks for authors, works about getting published in the Canadian and international marketplace, and more specific reference works for screenwriters, playwrights, and other kinds of writers. We also house the standard reference works for the study of English literature as well as specialized tools for research in post-colonial and world literatures.

The periodical collection supporting research in Creative Writing is comprehensive as York University Libraries subscribe to many of the core English newspapers, magazines and literary journals which offer reviews of creative works, as well as a substantial set of subscriptions to journals of literary criticism. Generally speaking, access is now provided to the electronic versions of current and back issues of periodicals. Such extensive and intensive coverage is made possible in part by the consortial agreements York has with other universities in Ontario and Canada. There are a smaller number of journal titles that are only available in paper copy and these are predominantly held in Scott Library. We also subscribe to JSTOR and Project Muse which hold many journals of interest to literary scholars.

York University Libraries subscribe to a wide range of subject-specific and interdisciplinary periodical indexes/databases. The MLA Bibliography is certainly the main literary database, but many others would be of interest to students and faculty in the Creative Writing certificate. These databases include JSTOR, Project Muse, CBCA, CPI Q, and Scholars Portal Journals. As well, the Libraries subscribe to several databases which exclusively index book reviews. We also have acquired access to online archives of historical material such as Black Women Writers, Defining Gender, Travel Writing, Underground and Independent Comics, Literary Manuscripts, North American Indian Drama, Empire Online, and Victorian Popular Culture (to name a small selection). We also subscribe to image databases such as ArtStor as well a number of relevant interdisciplinary indexes such as the Humanities Index, Women's Studies International, LGBT Life and relevant tools in related disciplines such as film studies and the performing arts.

The York University Clara Thomas Archives and Special Collections (CTASC) is a rich resource for writers and our archivists are delighted to introduce students to primary research materials. There are many archives of interest to creative writing students and faculty, particularly the personal papers of writers (of which we have many) as well as the fonds of various cultural organizations, festivals and agencies. We also have a growing collection of rare and unusual literary works in CTASC, including a Canadian graphic novels collection, the Wyndham Lewis Collection, the Ruth Dworin Collection, and an artists' books collection. Other materials of historical significance are housed in CTASC and the curious creative writer may find inspiration in any number of these primary sources.

Because library collections in the field of English extend over two campuses and because all students need easy access to materials at both the Scott and the Frost libraries, the Library provides an intercampus borrowing system at no charge. Students can submit a request online to have library materials delivered from one campus to the other by the following business day. Students can themselves use a free shuttle service to travel between campuses.

SUPPORT FOR TEACHING AND LEARNING

Glendon Programs liaison librarians are available to assist students and faculty with library research, provide in-class workshops, and develop guides that can help to manage and organize research literature. York University Libraries have a very active information literacy program supporting undergraduate students and the number of programs adopting a curriculum-integrated approach to information literacy has grown. This involves an approach where library instruction is tailored to course learning outcomes and embedded strategically at critical junctures throughout the program, making it accessible to all students through a scaffolded approach. The benefits of this are that library research skills (and information literacy) are learned in the context of the program and that students are equipped with both the tools and knowledge of key research databases to remain current and knowledgeable in their field. Frost Librarians can lead course-specific workshops in a library lab or in the classroom, by arrangement with individual course directors. As per the abovementioned types of support, librarians are available to work with faculty and/or the Undergraduate Program Director to develop a curriculum-integrated approach to information literacy at the undergraduate level. Ideally, such an approach would embed information literacy instruction and principles throughout the entire Certificate.

Individual research assistance is available to students in person, as well as via online chat, email, and telephone. Frost Library can offer such assistance in both English and French, depending on patron preference. All libraries at York University provide a Reference / Research Desk where students can request individual assistance with finding and using library resources and developing effective search strategies, as well as technical assistance. At Frost Library, inperson research assistance is available 6 days a week (hours may be reduced during the summer and between academic terms). The bilingual online chat reference service, “Ask-a-Librarian / Clavardez avec nous,” extends research assistance to 10 p.m. on weeknights. Undergraduate students can also make an appointment for extended assistance with a Frost librarian. A variety of services for differently abled students is available by arrangement with Library Accessibility Services (Scott Library). Facilitated library services include converting materials to accessible formats, retrieving items from the library stacks, using adaptive technology, accessing the Scott Library’s adaptive equipment lab, and arranging individual research assistance for differently abled students.

CONCLUSION

Library support for an Undergraduate Certificate for Creative Writing across Contexts, at Glendon is strong as indicated in the individual new course proposals. Collection development is ongoing and is based on a commitment to developing library resources that are in alignment with curricular and research activities. The Libraries look forward to supporting this new Certificate and to ensuring that we continue to have the resources and services in place to support the teaching, learning and research needs of students and faculty.

GLENDON CAMPUS

CAMPUS UNIVERSITAIRE GLENDON

Laboratoire de médias numériques de Glendon

Glendon Digital Media Lab

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April 13, 2021

To whom it may concern,

I am writing this letter on behalf of the Glendon Digital Media Lab (GDML) to state our full support for the new disciplinary Certificate in Creative Writing across Contexts (CCWAC) proposed by the Glendon Department of English. The proposed certificate presents a highly innovative framework that provides writers with a unique opportunity to develop specific, transferrable writing skills and expand their professional network. It is evident from the proposal that the structure and design of the proposed certificate will significantly enhance experiential education and learning. In doing so, it will further position York University as a cutting edge post-secondary institution.

Digital technologies and media literacy have become a crucial component of all career scenarios. Media literacy has not only become increasingly essential as a pedagogical tool but is also a skill that is in high demand by employers. GDML was created to foster digital literacy on campus. It already hosts some of the laboratory facilities required by the new certificate, including professional software enabling the production of a magazine, website, and other digital media. Specifically, GDML offers a computer room with 12 high-end computers configured with Adobe Creative Suite, enabling some of the key experiential components of the new certificate. Hence, GDML is willing and able to provide the resources mentioned in the proposal.

I look forward to the implementation of this new certificate.

Philippe Theophanidis
Assistant Professor
Communications Program
Glendon College, York University

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April 24, 2021

To whom it may concern,

I am pleased to provide this letter of support for the new disciplinary Certificate in CreativeWriting across Contexts (CCWAC) proposed by the Glendon Department of English.

This proposed new certificate builds upon Glendon's reputation as an innovative, interdisciplinary centre for student-centered and need-based learning. The practice of creative writing as expressed through a wide spectrum of platforms, as well as in conversation with a rich diversity of cultural and social phenomena promises to provide students with the necessary opportunities to apply 21st-century liberal arts skills and knowledge.

This certificate calls upon several units at Glendon, most notably the Department of English – the main sponsor of this program – but also the Glendon Digital Media Lab, a relatively new entity whose main objective is to foster digital literacy on campus. The Lab will be the site where much of practical learning will be realized.

The Department of English submitted an earlier version of this certificate, and while the comments provided by the Senate ASCP were then perceived as somewhat of a setback, the Department made the most of this opportunity to further develop and enrich the format and content of this new proposal. I am confident that this formula is even better suited for our students' and for society's needs. As this innovative certificate does not overlap with nor duplicate other such programs at Glendon, my office will be happy to provide the resources to support this new program through its full deployment toward sustainable enrolment.

Therefore, I am pleased to support this proposal without any reservation whatsoever, and I look forward to it being implemented.

Marco Fiola, Principal

New Field Proposal – Summary of Program Changes

1. Program: Graduate Program in Health
2. Degree Designation: MA and PhD
3. Type of Modification: New Graduate Field Proposal
4. Effective Date: Fall 2022

5. Summary of proposed changes (the attached New Field Proposal describes all of the following in detail).

a) Description of the proposed modifications	Modifications are proposed in the context of launching a new Field in the Graduate Program in Health
b) Rationale for the proposed changes	Proposed new field was always planned for the Graduate Program in Health. We now have the faculty resources to offer a program of study in this high demand area
c) Updated mapping of the program requirements to the program learning outcomes	See Appendix A5
d) Consultations undertaken with relevant academic units, and external support.	See section 9 of the proposal for consultation details. See support statements from other units (Appendix C) and external organizations (Appendix D)
e) Resource implications and how they are being addressed (e.g., through a reallocation of existing resources), including a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.	No new resources are being requested. For Dean's support letter, see Appendix B
f) How students currently enrolled in the program will be accommodated.	Students currently enrolled in the program will not be affected
g) Calendar Copy (side-by-side comparison of the existing and proposed program requirements as they will appear in the Graduate Calendar).	See Appendix A6 for side-by-side Calendar Copy

Graduate Field Proposal
Graduate Program in Health
(using QUQAP template)

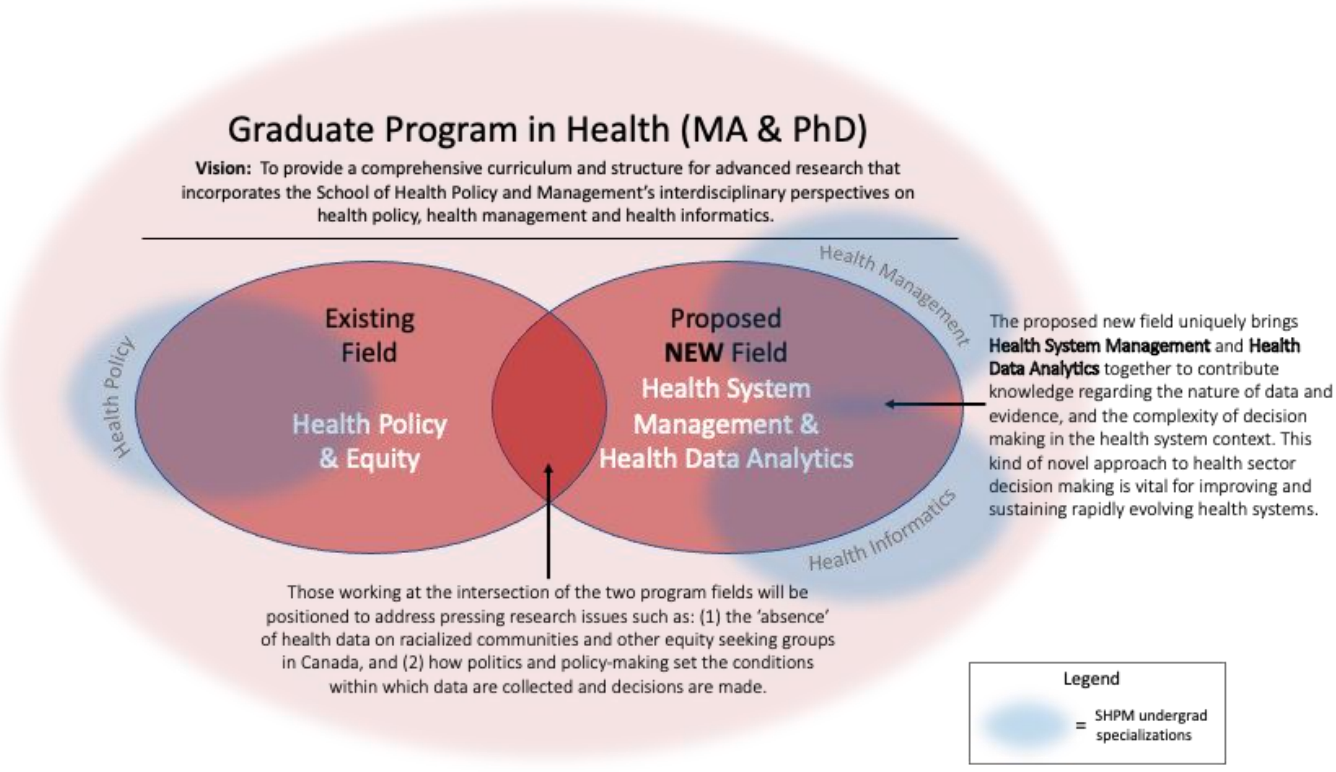
Definition of a Field

In graduate programs, field refers to an area of specialization or concentration (in multi/interdisciplinary programs a clustered area of specialization) that is related to the demonstrable and collective strengths of the program's faculty. Institutions are not required to declare fields at either the master's or doctoral level. Institutions may wish, through an expedited approval process, to seek the endorsement of the Quality Council.

Graduate Field Proposal

1. Indicate the name of the field being proposed and identify the parent program.

The new field being proposed is in "Health System Management and Health Data Analytics". The Parent program is the Graduate Program in Health – a program envisioned in 2008 in keeping with York's strong tradition of interdisciplinary programs. The graphic below shows the relationship between the existing field and the proposed new field (in red). Further details of how the new field is situated within the Graduate Program in Health are provided below (see page 3).



2. Provide a description of the field (its intellectual focus, etc.) including the appropriateness and consistency of the field name with current usage in the discipline or area of study.

The new field brings together two areas of intellectual focus that correspond to specializations within our school – health management and health informatics (as shown in blue in the graphic above).

These two areas come together in a way that centers around the use of health data analytics to support health system management decision making. Simply put, the justification for the new field has to do with the fact that data, alone, are insufficient to change practice – indeed, other fields have also emerged in response to this problem.[1,2] The behavioural decision literature provides further justification for the proposed new field. For example, given the sophistication of data analytic techniques and the increasingly wide availability of health data, one might expect that, as Simon (1978) predicted, we would by now have reached the point where the classic rational model would provide an increasingly accurate description of how health system decisions are made. Yet this is not the case. Instead, health system decision-making remains resistant to "rational" approaches in recognition of the role of 'judgment', power and 'politics' in determining decisions.[3] At an individual level / on the clinical side, variability in patient preferences highlights the role of 'judgement' in healthcare decision making.

Areas of Focus in the new Field. The WHO defines a *health system* as all activities whose primary purpose is to promote, restore or maintain health.[4] This includes not only the delivery of formal health services, but also public health activities such as health promotion, disease prevention, and other health interventions. *Health system management* and health management education focus on decisions pertaining to how a country's health system is organized, managed, and delivered.[5] *Data Analytics* refers to integration of heterogenous sources of data, drawing inferences to enable various types of decision-making.[6] The need to bring health system management and health data analytics together in the proposed new field is highlighted by the fact that health systems are dynamic, complex, open systems that interact with the political and social environments external to those system. As such, managerial decision making in this context is complex. The proposed new field seeks to contribute knowledge regarding both the technological *and* the socio-political aspects of how health system decisions are made and how system change occurs (or why it sometimes fails to occur). The field name, *Health System Management & Health Data Analytics*, faithfully reflects the proposed field of study, bringing the concept of analytics into the healthcare decision-making context.

From a scholarly perspective the proposed Field draws on a constellation of disciplines (including aspects of organizational behaviour and theory and organizational psychology that address micro and macro-level decision making, as well as informatics, information management and decision science, and implementation science) that come together in service to improving decision making and knowledge mobilization in the health sector.

The fields of Health Management and Health Informatics/Analytics are truly interdisciplinary in nature – something that is evident from the diverse backgrounds of our faculty members. For example, faculty with expertise in healthcare organization and management or health informatics completed most of their theoretical training in root disciplines of organizational theory and computer science, respectively. By bringing organizational decision making and informatics together in the health sector context, the proposed field promises to offer an innovative, cross-cutting program that approaches the field in a comprehensive way – incorporating the analytical, but also the social, political, economic and organizational aspects of decision making. The core faculty in the School of Health Policy & Management are unique in the training and expertise they possess and are exceedingly well positioned to

[1] Madon T, Hofman KJ, Kupfer L, Glass RI. Implementation science. *Science*. 2007. 1728–9.
[2] Straus SE, Tetroe J, Graham I. Defining knowledge translation. *CMAJ*. 2009:165–8.
[3] Langley A, Mintzberg H, Pitcher P, Posada E, Saint-Macary J. Opening up Decision Making: The View from the Black Stool. Organ Sci. 1995; 6:260–79.
[4] WHO. The world health report 2000 - Health systems: improving performance. https://www.who.int/whr/2000/en/
[5] Weil TP. Health management education in Europe and in the United States: A comparative review and analysis. Heal Serv Manag Res. 2013; 26:76–85.
[6] Runkler TA. Data analytics: Models and algorithms for intelligent data analysis, 2nd edition. Springer: Wiesbaden, Germany. 2016

deliver training in the proposed area (see section 6). In addition, faculty from across the university complement the School's existing strengths.

Recent Developments in the Field. The past two decades has seen a dramatic increase in the health sector's sophistication in the use of financial, clinical and health information in order to function more effectively and help with strategic planning and decision making at the organization and system levels. Increased emphasis on accountability, performance measurement, and evidence-based decision making has led to increased demand for and reliance on various information sources. Rapidly changing technologies and interest in more integrated approaches to the delivery of care and services have also created a need for enterprise-wide programs dealing in data, information, and knowledge management/utilization and decision making.

By bringing together perspectives and individuals with an interest in health organization and management and health informatics and analytics, this field seeks to enhance the capabilities of both groups. The field of health informatics and analytics includes individuals with unique expertise in healthcare data and information management, including patient information collected in the medical record/patient care database and management data collected and housed in administrative data systems such as the Management Information Systems (Ontario Hospital Reporting System) financial data. In view of their overall responsibility for collection, management, analysis and dissemination of patient and management information, it is imperative that these individuals master the knowledge and competencies needed to respond to rapidly advancing and increasingly sophisticated healthcare industry information needs. However, it is increasingly imperative that health informatics and analytics specialists possess a clear understanding and appreciation of the context within which information is used (or more often, not used), including facilitating and limiting factors, judgement, biases, and "noise" – all of which are inherent in human decision processes.

Similarly, managers in the healthcare system are increasingly expected to incorporate the kind of health information described above, as well as various other sources of research evidence into their decision-making process. Accordingly, the landscape, skills and focus health system managers need to navigate is changing. Evidence of this change can be seen in recent initiatives in research and knowledge translation geared toward training senior-level health system managers in evidence-based decision-making (e.g. The Canadian Foundation for Healthcare Improvement's EXTRA (Executive Training for Research Application) Program which trains a small number of senior health care executives each year). By merging the disciplines of health informatics and health management decision making, the proposed field will be ideally positioned to respond to human resources needs in this area by producing graduates with the ability to understand and handle the wealth of information available within the applied context of optimizing decisions and performance outcomes within the health system. All of this will be accomplished in a program that acknowledges and addresses the social, psychological, political and change management aspects of decision making.

Situating the proposed new field within the Graduate Program in Health. Students enrolled in the proposed new field will also have opportunities for intra-program learning with the Health Policy and Equity field. The intentional intersecting of the two fields by having students take the same foundational courses (section 4) means students will not only think about the field of health system management & health data analytics, but will also be exposed to some of the most pressing health, and health policy and equity questions facing our health sector, such as what inequities affect access to health and health care services, or how do politics and policy-making set the conditions promote or hinder health equity. This exposure will enable students to raise cutting-edge questions and will lead to new thinking about how to design, collect, manage and analyse data to ensure that programs and services enable equitable access and better, more equitable, health outcomes. Our students will be well-positioned to take these insights forward to help inform the design, collection, and interpretation of patient and management data in ways that examine equity considerations as we pursue improvement of

health systems. As an example, those working at the intersection of the proposed new field in Health System Management & Health Data Analytics and the existing field of Health Policy & Equity will be ideally positioned to address timely research and practical questions pertaining to things such as the 'absence' of health data on racialized communities and other equity seeking groups in Canada.

The field of Health System Management & Health Data Analytics is intended for new graduates from a range of disciplines including health studies, social sciences, admin studies, organizational psychology, engineering, information technology, in addition to healthcare practitioners and professionals in clinical and managerial roles interested in pursuing rigorous applied research training at the graduate level. In all these cases, individuals will have a strong interest in the application and use of knowledge and information in the context of health system management. Due to the increasing connection between health system management and health sciences and technology, the program's unique and innovative focus, and the reputation of the faculty, this field will attract international scholars, researchers and students.

From the strategic perspective of the university, the field directly addresses the growing need for digital fluency, information literacy and knowledge for the future and the new field will meet an increasingly pressing need for graduates with academic training and skills in health management and health data analysis who can exploit the wealth of data and evidence increasingly available in the health field to help optimize decision making and improve performance outcomes across the health system. **Data analytics and data science produces graduates with valuable, highly technical, skills capable of querying health data while management and health management programs impart valuable knowledge required to operate health care organizations and health systems. The proposed field uniquely brings these two areas together to contribute to knowledge and expertise regarding both the nature of data and evidence, and the complexity of decision making in the health context. This kind of novel approach to health sector decision making is vital for improving and sustaining rapidly evolving health systems.**

3. Comment on the relationship of the admission requirements for the field to those of the parent program. If the same, describe the program admission requirements. If different, describe the field admission requirements, indicate how they are different from those of the parent program, and provide a rationale for the difference in relation to the focus and learning outcomes of the field.

Program Admission requirements will be the same across both fields of the parent program (Program Learning Outcomes are included in Appendix A5). For both the MA and the PhD Programs, applicants must:

- have completed an honours undergraduate degree with B+ average or equivalent in the last two years of study (MA applicants) / completed a Master's degree with B+ average or equivalent *(PhD applicants)*. Prior degree must be in a field related to health policy, health management or health informatics. Related disciplines might include psychology, political science, sociology, management, or nursing.
- Provide a statement of interest demonstrating commitment to advanced research in the field. The statement should include a discussion of the applicant's background, interests, skills and career goals, along with a proposed field of study and research interests.
- Demonstrate ability in writing and research by submitting a recent research paper or report that the applicant has written for a course or in an employment context.
- Provide two letters of reference, both preferably from university faculty. Equivalencies (letters from non-university professional colleagues) will be considered for applicants who have been out of school for more than 5 years.

4. Comment on the relationship of the curricular requirements for the field to those of the parent program. If the same, describe the program requirements. If different, describe the field requirements, indicate how they are different from those of the parent program, and provide a rationale for the difference in relation to the focus and learning outcomes of the field.

Both fields share the same curricular requirement structure (foundational, field-specific, and elective courses, MRP (MA students), two Comprehensive Exam Papers and Dissertation (PhD students). Both fields are designed to be interdisciplinary, incorporating the perspectives of health policy, health system management and decision making, knowledge transfer, and health equity, providing students with a strong and broad theoretical foundation. Students in both fields of the Graduate Program in Health obtain this *breadth* of knowledge through Foundational courses that are common to all students in the Graduate Program in Health (see figures 1&2 on the next page, top box). Students in the proposed new field in Health System Management and Health Data Analytics will obtain *depth* of knowledge in this area through their field-specific course requirements (see figures 1&2) and electives, and through the MRP (MA students), and comprehensive exams and Dissertation (doctoral students). Note that while doctoral students in the existing field (Health Policy & Equity) are not required to take a statistics course, doctoral students in the Health System Management and Health Data Analytics field will be required to take a graduate level statistics course as one of their electives if they have not previously completed one. Detailed curricular requirements for MA and PhD students are shown in the flow charts in Figures 1 and 2, respectively (next page). For a description of the **Program Learning Outcomes** and how curricular requirements support their achievement see Appendix A5. Old and New **Calendar Copy** is included in Appendix A6.

5. Provide a list of courses that will be offered in support of the field. The list of courses must indicate the unit responsible for offering the course (including cross-lists and integrations, as appropriate), the course number, the credit value, the short course description, and whether or not it is an existing or new course. For existing courses, the frequency of offering should be noted. For new courses, full course proposals are required and should be included in the proposal as an appendix. (The list of courses may be organized to reflect the manner in which the courses count towards the program/field requirements, as appropriate; e.g. required versus optional; required from a list of specified courses; specific to certain concentrations, streams or fields within the program, etc.)

A list of courses that will be offered in support of the proposed new field is provided in Appendix A1. These are organized by the manner in which they count towards program requirements for students in the new field. Offering unit, new/existing status and frequency of offering is indicated for each course in Appendix A1. As noted, courses which are listed as "Foundational" as well as the "Elective" courses service both the existing field (Health Policy & Equity) AND the proposed new field (Health System Management and Health Data Analytics). As such, many are already routinely offered. In addition, students in one field can take a field-specific course from the other field as an elective. Accordingly, only a small number of new courses will need to be consistently offered to meet the needs of students in the new field of Health System Management and Health Data Analytics. Two new course proposals for students in the proposed new Field are included in Appendix A2 (Health Data Visualization) and Appendix A3 (Machine Learning for Health). As an interdisciplinary field designed to address challenges at the intersection of *health system management* and *health data analytics*, course requirements expose students to a variety of content areas, both technical and social science oriented, as well as methodological approaches common to these areas (both quantitative and qualitative).

Figure 1. MA in Health - Program Progression & Requirements

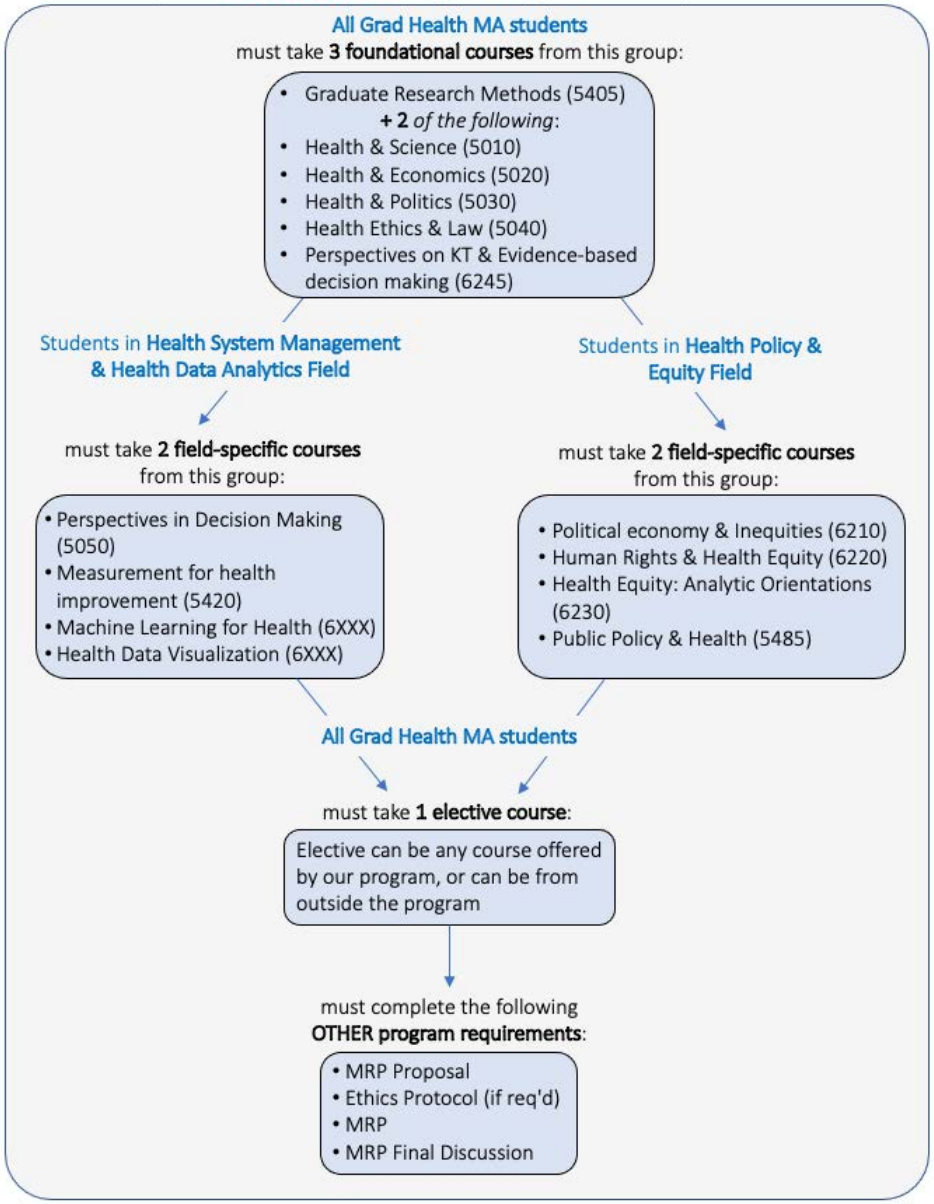
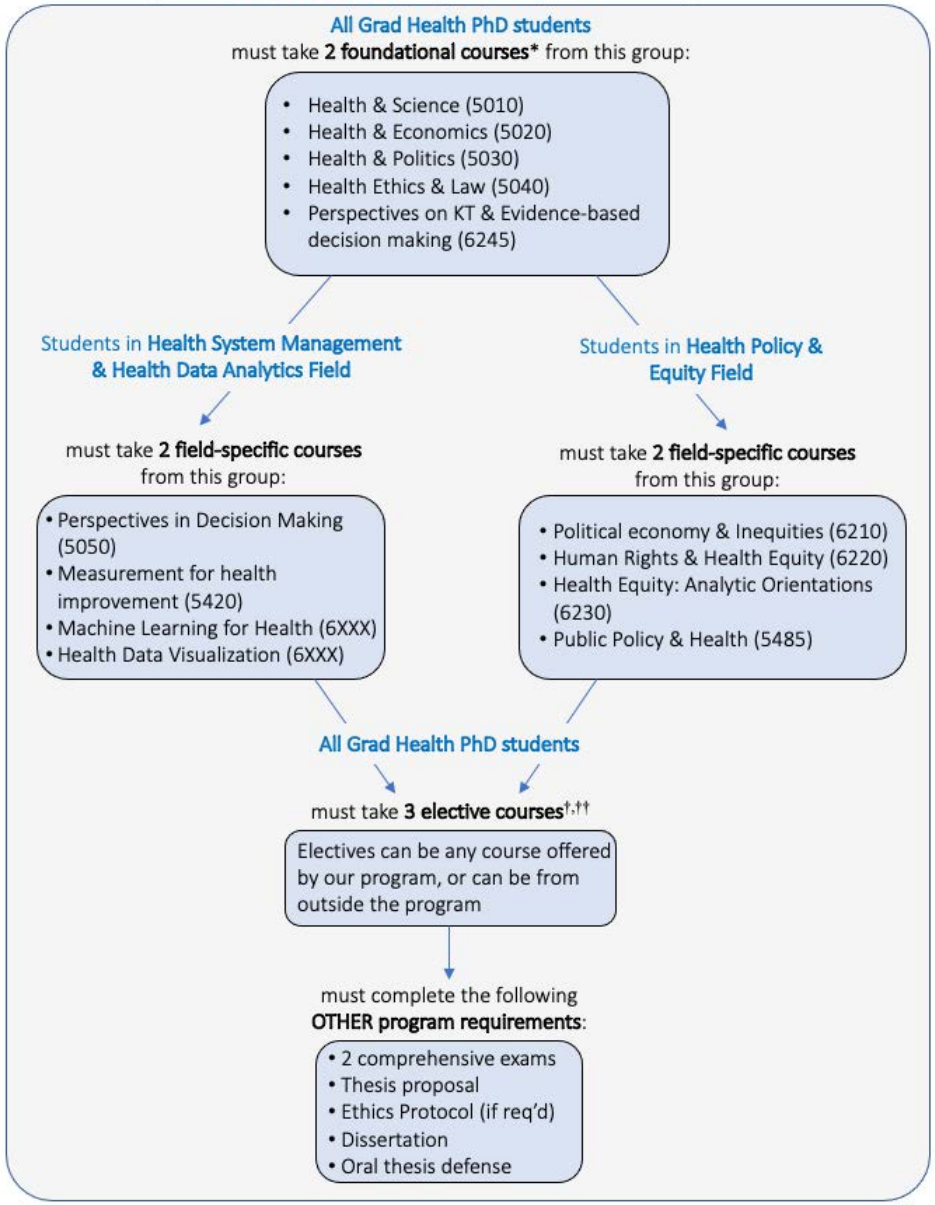


Figure 2. PhD in Health - Program Progression & Requirements



* PhD students who have not previously taken a graduate level methodology course, must take HLTH 5405 3.0 in addition to the 2 foundational courses for a total of 3 foundational courses.

† PhD students in the HM&HDA field without a graduate level statistics course must take one as one of their electives (KINE and PSYCH have indicated they could likely accommodate our annual intake of 1-2 PhD HLTH students in one of their graduate statistics courses – see Appendix C5)

†† With the GPD's approval, students may take up to two 3.0 courses from other graduate programs at York University to fulfill their elective requirements.

6. Comment on the expertise of the faculty who will actively support/participate the field and provide a Table of Faculty by field, as follows:

Table 2a lists ten faculty members whose primary appointment is in the School of Health Policy & Management (plus two cross-appointed faculty), all of whom have expertise in either Health Management or Health Data Analytics (the area of the proposed new field). Our program's capacity to provide adequate participation, support and supervision in the area of the proposed new field has increased by 25% in the last two years with the hiring of 3 new faculty members (Appel, Granek, van Dreumel). All 12 faculty members listed in table 2a have expressed interest in being actively involved with supervision and/or teaching and several have expressed interest in serving on the Graduate Program's Executive Committee. Together, these faculty members have a broad range of expertise that spans all aspects of health management and health data analytics. Up-to-date CVs of faculty in Table 2a – those who will actively participate in delivering the graduate program – are included as Appendix E.

In addition, there are approximately 10 other faculty members with expertise in Health Policy, Equity, or Critical Disability studies, who can sometimes play supportive roles as MRP and dissertation committee members. Because of the unique interdisciplinary nature of our School and our underlying concern with equity, these ten individuals can provide an important source of ancillary expertise to the new field (See table 2b).

Finally, there are several faculty members from other units at York who, from time to time, will act as MRP or dissertation committee members and may occasionally teach in the program. These are individuals with primary appointments to other graduate programs but whose expertise overlaps with the health management and health data analytics (see table 2b).

Table 2a – Faculty in Health System Management and Health Data Analytics Field

Faculty Member & Rank	Home Unit	Expertise	Supervisory Privileges †
Primary Field: Health System Management and Health Data Analytics			
Farah Ahmad Associate Professor	Health Policy & Management	Primary care settings; vulnerable communities; eHealth innovations	Full
Lora Appel Assistant Professor	Health Policy & Management	Virtual reality; Aging and dementia	Associate
Tamara Daly Professor	Health Policy & Management	Paid and unpaid care; gender and health; health care working conditions; health equity for older adults and those who provide care; comparative long-term care policy; health policy and equity	Full
Serban Dinca-Panaitescu Associate Professor	Health Policy & Management	Medical equipment; health information systems; e-health	Full
Christo El Morr Associate Professor	Health Policy & Management	Community-based research; health virtual communities; mobile communities; e-collaboration; chronic disease management	Full
Liane Ginsburg Professor	Health Policy & Management	Healthcare organization and management; patient safety culture; nursing home quality; knowledge translation, implementation science	Full
Leeat Granek Associate Professor	Health Policy & Management	Psycho-oncology; Provider health and well-being; decision making;	Full

		Psychological and social determinants of health; Qualitative methods	
Lillie Lum Professor	Nursing / Health Policy & Management	Health Human Resource Management; Promoting equitable access and participation in the health system	Full
Ellen Schraa Associate Professor	Health Policy & Management	Financial measurement of health care organizations for funding reform and performance evaluation	Full
Peter Tsasis Associate Professor	Administrative Studies / Health Policy & Management	Interface between interorganizational collaboration and patient outcomes	Full
Lynda van Dreumel Assistant Professor	Health Policy & Management	Health Professional Regulatory models; Healthcare leadership	Associate
Hannah Wong Associate Professor	Health Policy & Management	Statistical regression and system dynamics modeling; elderly population health; diagnostic tools and therapies; systems problems	Full

† Consistent with the Graduate Program in Health Approved Appointment Criteria, Associate members may act as the principal supervisor of master's theses and as a co-supervisor of doctoral dissertations; for faculty whose primary FGS appointment is in the Graduate Program in Health, Full membership comes with tenure and promotion to Associate Professor)

Table 2b – Faculty in Other Fields

Faculty Member & Rank	Home Unit	Primary Field / Expertise	Supervisory Privileges
Primary Field: Health Policy & Equity / Critical Disability Studies			
Rachel da Silveira Gorman Associate Professor	Health Policy & Management / CDS	Anti-racist Disability Theory	Associate
Nancy viva Davis Halifax, Associate Professor	Health Policy & Management / CDS	Arts-based Research and Creation	Associate
Geoffrey Reaume Associate Professor	Health Policy & Management / CDS	Mad People's History	Associate
Jessica Vorstermans Assistant Professor	Health Policy & Management / CDS	Disability and Equity; Human Rights	Associate
Claudia Chaufan Associate Professor	Health Policy & Management	Political Economy of Global Health / Antiimperialist & Anticolonial theory	Full
Sean Hillier Assistant Professor	Health Policy & Management	Indigenous Health	Associate
Marina Morrow Professor	Health Policy & Management	Critical Health Policy; Mental Health and Social Inequity	Full
Dennis Raphael Professor	Health Policy & Management	Social Determinants of Health	Full
Amrita Daftary Assistant Professor	Global Health	Health Services research & evaluation	Associate
James Orbinski Professor	Global Health	Clinical Public Health; Health Emergencies	Full
Adrian Viens Associate Professor	Global Health	Ethics; Legal Theory and Public Policy	Full
Mary Wiktorowicz Professor	Global Health	Transnational and National Governance Models Developing Health Policies	Full
Faculty with Primary Appointment in Another Program			
You-Ta Chuang Professor	School of Administrative Studies (LAPS)	Knowledge transfer within organizations; performance feedback on firm behavior; social movement activities in orgs	Associate

Kelly Thompson Associate Professor	School of Administrative Studies (LAPS)	Organizing and Change; Diversity, Equality and Inclusion; Management	Associate
Mary Fox Associate Professor	School of Nursing	Interprofessional interventions to improve outcomes; Qualitative and quantitative analysis; systematic reviews	Associate
Luiz Marcio Cysneiros Associate Professor	School of Information Technology (LAPS)	Requirements Engineering in the Health Care Domain; Business Modeling	Associate
Manar Jammal Assistant Professor	School of Information Technology (LAPS)	Machine Learning, Networking, Optimization, Cloud Computing	Associate
Enamul Hoque Prince Assistant Professor	School of Information Technology (LAPS)	Data visualization; Natural language processing	Associate
Amin Mawani Associate Professor	Schulich School of Business	Economic analysis; cost-benefit analysis of illness prevention programs	Associate
Joseph Mapa Adjunct Professor & Executive Director (Health Industry Management MBA)	Schulich School of Business	Leadership and Strategic Management	Associate
Kevin Tasa Associate Professor	Schulich School of Business	Negotiation and decision making; team dynamics	Associate
Jianhong Wu Professor	Department of Mathematics & Statistics	Complex disease modelling	Associate

7. Comment on the projected in-take into the field, including the anticipated implementation date (i.e. year and term of initial in-take), and indicate if the projected in-take is within or in addition to the existing enrolment targets for the parent program.

Projected in-take into the new field will be 8 MA students and 2 PhD students. These in-take numbers are within our existing enrolment targets for the Graduate Program in Health and are based on splitting our current in-take in the Graduate Program in Health (which is approximately 20 MA and PhD students annually) between the Health Policy & Equity field and the new field in Health System Management and Health Data Analytics. The anticipated implementation date for the new field is September 2022.

8. Comment on the impact of the field on the parent program, focusing on the extent of diversion of faculty from existing graduate courses and/or supervision, as well as the capacity of the program to absorb any anticipated additional enrolment.

By splitting the intake between the existing and the new field, the new field will (1) alleviate the disproportionate supervision burden that currently resides with a small number of SHPM faculty with expertise in the Health Policy & Equity field, and (2) provide welcome supervision and graduate teaching opportunities for faculty in the health management and health informatics areas.
In terms of teaching, with only a small net increase in the number of new graduate courses offered annually (see section 5 above), the new field will not divert faculty away from existing graduate courses. Instead, it will allow for a more equitable spread of graduate and undergraduate teaching among SHPM faculty. Zero or a negligible additional enrolment above our existing Graduate Program in Health target is anticipated.

The following consultations and approvals took place within the School of Health Policy & Management: (1) the new field was agreed upon as a priority at our School's most recent strategic

planning retreat; (2) the course structure for the Graduate Program in Health (the parent program) was discussed and agreed upon by the Graduate Health Executive Committee during the Summer and September 2020 meetings; (3) between October 2020 & January 2021, the new field proposal was developed by an ad hoc sub-group of health management and health informatics faculty; (4) the proposal was sent back to the Grad Health Executive Committee for review and approval and the motion received unanimous approval by all members of the Grad Health Exec on February 25th; (5) the new field proposal was sent to our School's Faculty Committee for discussion and approval and received unanimous approval at our March 18th meeting (20 in favour, 0 opposed, 0 abstained).

9. Support statements

- **from the relevant Dean(s)/Principal, with respect to the adequacy of existing resources necessary to support the new field, as well as the commitment to any plans for new/additional resources necessary to implement and/or sustain the new field**
- **from the relevant Faculties/units/programs confirming consultation on/support for the new program, as appropriate**
- **from professional associations, government agencies or policy bodies with respect to the need/demand for the proposed program, as appropriate**

A support **statement from the Dean** of the Faculty of Health is included in Appendix B. **In terms of consultation with other relevant units/program,** we have consulted extensively with relevant programs on campus including The School of Information Technology in LAPS (support letter attached – see Appendix C1) and the proposed new Health Industry Management Program in Schulich (support letter attached – see Appendix C2). We have also consulted with the co-Chair of the University-wide taskforce on AI who is also a member of the Lassonde School of Engineering (support letter attached – see Appendix C3). All of these consultations suggest a high degree of complementarity between our proposed new field and their graduate programs. Indeed, as indicated in each support letter, our consultations identified avenues of collaboration and resource sharing (e.g., for advising, supervisory committee membership, and possibly opportunities for students to take courses across these programs. We also consulted with the Chair of the Mathematics and Statistics Department as they are developing an undergraduate Data Science major that is anticipated to have large enrollment and would require students to choose a domain specialization. It is possible that as many as 100-200 students could choose Health as a domain specialization which could provide a pathway to our proposed new Field in Health System Management and Health Data Analytics (support letter attached – see Appendix C4).

One question identified by Schulich during our consultation pertains to naming of the proposed new field (initially proposed as Health Management and Health Data Analytics). We discussed overlap and possible confusion in the use of the term management across their new program (in Health Industry Management) and our new field, both of which are health focused. Subsequent to receiving their support letter (Appendix C2) we had further discussion and agreed this is a naming issue rather than a substantive concern regarding program overlap (our field is a regulated, research-based graduate program; Schulich's Health Industry Management program will be a professional unregulated program with a broader focus). Following this discussion, we changed the name of the proposed new field from "Health Management and Health Data Analytics" to "Health System Management and Health Data Analytics" and feel the program names are suitably distinguished (Schulich's new Program will likely be in Health Industry Management). Importantly, the benefits of ongoing collaboration between the two Schools are clear and we are all committed to continue working collaboratively to make clear differences in our respective programs/fields and different pathways available to prospective students. Note that our letters of support were solicited in prior to the field name change and they therefore refer to the original program name, Health Management and Health Data Analytics.

Lastly, we include support letters from eight key organizations, associations, and individuals relevant to the proposed new field. Appendices D1-D8 includes letters of support from Choosing Wisely Canada, University Health Network's Open Lab, Alliance for Healthier Communities and other organizations operating in primary care environment, acute and complex continuing care hospital leadership, and from the past president of the College of Family Physicians and the Canadian Medical Association (S. Buchman), and from a Canada Research Chair in knowledge translation (C. Estabrooks). These letters from key stakeholders across the continuum of care all endorse the proposed new field and attest to the need/demand for the proposed program to help improve data use and decision making at the individual, group, organization, and health system levels.

Appendices

Appendix A – Course Related Materials

A1 – Course List
A2 – New Course Proposal – Health Data Visualization
A3 – New Course Proposal – Machine Learning for Health
A4 – Library Statements
A5 – Program Learning Outcomes
A6 – Old and New Calendar Copy

Appendix B – Dean's support statement

Appendix C – Support Statements from other units / programs

C1 – Support Statements from The School of Information Technology (LAPS)
C2 – Support Statements from The Health Industry Management Program (Schulich)
C3 – Support Statements from The University-wide taskforce on AI
C4 – Support Statements from The Mathematics and Statistics Department (Science)
C5 – Support Statements from KINE and PSYCH GPDs re Statistics Courses (FoH)

Appendix D – Support Statements from Health Organizations

D1 – Industry Support Statement: Choosing Wisely Canada,
D2 – Industry Support Statement: University Health Network's Open Lab
D3 – Industry Support Statement: Alliance for Healthier Communities
D4 – Industry Support Statement: Ontario Health Team
D5 – Industry Support Statement: Past president Canadian Medical Association and College of Family Physicians of Canada
D6 – Industry Support Statement: North York General Hospital
D7 – Industry Support Statement: Toronto Grace Health Centre
D8 – Industry Support Statement: CRC in Knowledge Translation

Appendix E – CVs (Twelve faculty in table 2a who will actively deliver the new field)

Appendix A1: Courses and Descriptions

FOUNDATIONAL COURSES

MA and PhD students must take three and two courses from among this group of foundational courses, respectively. MA students must take HLTH 5405 as one of their Foundational courses.

HLTH 5405 3.0 Research Methods Seminar

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Annually

Short course description: This is an advanced course in research methodology. Particular emphasis will be placed on research design (experimental, quasi-experimental), methods, and paradigms of understanding that incorporates the philosophical orientations of positivism, constructivism and critical social science. The implications of such understandings for carrying out and assessing research in the social sciences including public policy, management and informatics will be examined and the appropriate methods for each paradigm presented and applied.

HLTH 5010 3.0 Health and Science

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Every 3-5 years

Short course description: Health and Science considers how science contributes to various aspects of human health. Studies in a number of areas of science, but primarily life sciences, have had huge impacts on the human condition. This course will explore the nature of certain advancements in human health and provide students with an in-depth understanding of key areas of research. The *biomedical research paradigm* will explore various advancements in our understanding of human biology including, but not limited to, studies on stem cells (what is consciousness, how should we treat neurological diseases), common molecular, cellular, physiological and behavioural mechanisms that underlie many diseases. *Health and Environment* will explore the importance of a healthy environment in determining human health (i.e. a cure for cancer isn't much good if we don't have a planet to live on). The *behavioural health research paradigm* will explore various bio-psychosocial determinants of health and the relationship between behaviour and biology.

HLTH 5020 3.0 Health and Economics

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Every 3-5 years

Short course description: Economic analysis deals with both inputs and outputs, or costs and consequences, in a world where resources – people, time, facilities, equipment and knowledge – are scarce. Economic analysis therefore concerns itself with choices, since our ability to produce all desired output (efficacious therapies) is constrained. These choices are made on the basis of explicit and implicit criteria. Economic analysis seeks to identify criteria that may be useful in deciding among alternative uses of scarce resources.

HLTH 5030 3.0 Health and Politics

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: Health and Politics considers how politics – the social relations that involve authority or power -- influence the domain of health studies. Three key areas are considered. *Paradigms of Health* examines the various ways that health issues are defined and activities related to such definitions are implemented. The *Determinants Of Population Health* consider how political decisions by governments and other policymakers shape the patterns of health and disease within a society. *The Organization and Delivery of Health Care* examines how health care systems are shaped by dominant political ideologies and the economic and social forces that influence policy decisions.

HLTH 5040 3.0 Health, Law and Ethics

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: This course explores the relationship between health, ethics and the law. It focuses on the following key areas of study: bioethical principles and approaches, selected case and statute law and health-related issues which illustrate the intersection between legal and ethical analysis. These issues have implications for both individual and public policy decision-making. All of them impact on the social, political and economic institutions which support the health care system. Ethical theory and medical practice will be scrutinized with a focus on the following key areas: foundations of healthcare ethics and practice, concepts of illness and disease, medical decision-making, resource allocation, autonomy, paternalism and justice. There has been a number of challenges to the assumption that everyone is treated the same in our current health care system. Consequently, equity-based, feminist, social constructionist and disability rights perspectives will inform the legal and ethical analyses. These perspectives reveal complex interconnections with other power systems that can have a negative influence on equitable access to health care, such as race, ethnicity, sexual orientation, class, age and disability. An interdisciplinary approach that employs these perspectives will expand our understanding of the determinants of health in ways that exclusive reliance on a biomedical perspective will not. It can also enable us to address key questions about developing and accessing responsive health care systems.

HLTH 6245 Perspectives on Knowledge Transfer, Evidence and Decision Making in Organizations

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: The study of the use of information, knowledge, and evidence in decision-making has long been an important part of organizational theory. Organizational scholars have focused on studies of decision-making for decades. In healthcare, the growing focus on the development and application of evidence-based decision making has stimulated interest in adopting similar guidelines for decision-making in managerial practice in healthcare. This course will explore perspectives on decision making in the organizational literature and the move to evidence-based Decision making in healthcare. Perspectives from other related disciplines will also be explored. This course will also explore models of knowledge transfer and exchange involving interactions between decision makers and researchers. More and better transfer of knowledge embedded in research is urgently needed to support improved performance in multiple areas of the health system. The conceptual and methodological dimensions of knowledge exchange will be discussed.

FIELD SPECIFIC COURSES (HEALTH MANAGEMENT AND HEALTH DATA ANALYTICS FIELD)

MA and PhD students must choose two courses from among this group of field-specific courses.

HLTH 5050 3.0 Perspectives in Decision Making & Information Systems

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: Decision Making and Information Systems aims to help health professionals understand the decision-making aspects (rational and non-rational) in health care. This course reviews decision making theories and information systems used for supporting decision making in health care, the opportunities they offer and the challenges they face.

HLTH 5420 3.0 Measuring and Improving Quality and Safety in Healthcare

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: This course addresses both the measurement and improvement of quality and patient safety in healthcare organizations. Students will learn the principles and processes of quality improvement (QI) and patient safety including QI theory and tools, the importance of system level factors in understanding patient safety failure, and the role that measurement, leadership, culture, and inter-professional teams play in QI and safety. The principles and practices of quality management will be critically assessed including consideration of current methods used to measure and track quality and safety, the state of empirical support for process improvement techniques, and data quality challenges that are central to the measurement of patient outcome in healthcare. Legal and regulatory issues in healthcare quality and safety will also be explored.

HLTH 5XXX 3.0 Machine Learning for Health

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	New	Bi-annually (approx)

Short course description: This course will introduce the fundamental concepts and principles of machine learning and its application in healthcare. We will explore machine learning approaches, health cases in relation to machine learning, and best practices for designing, building, and evaluating machine learning applications in healthcare. Opportunities and challenges that machine learning present for health and society will be covered.

HLTH 5XXX 3.0 Health Data Visualization

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	New	Bi-annually (approx)

Short course description: This course will introduce the fundamental concepts and principles of data visualization and its application in healthcare. We will explore the history of data visualization and its current uses in healthcare: from infographics informing patients and consumers, to EHR dashboards aiding providers in decision-making, to detailed epidemiology maps driving policymaking aimed at protecting population-health. Students will learn best practices for designing and evaluating health data visualizations, and learn to think critically about literacy, ethics, and the future of the field. By the end of this course, students will be able to use online tools to create powerful visuals that tell a story and inform diverse stakeholders.

FIELD SPECIFIC COURSES (HEALTH POLICY & EQUITY FIELD)

MA and PhD students must choose two courses from among this group of field-specific courses.

HLTH 6210 3.0 Political Economy of Health Inequities

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: The Political Economy of Health Inequities examines how health inequities result from public policy decisions that skew the distribution of economic and social resources among the population. These public policies are shaped by the form that the economic and political systems take in modern capitalist economies such as Canada. Canada is firmly entrenched in the “liberal” political economy camp which is associated with minimal government intervention in the operation of the marketplace. The forces that could challenge marketplace domination of societal distribution of resources are examined as a means of moving towards more equitable distribution of resources and power, thereby reducing health inequities and improving population health.

HLTH 6220 3.0 Human Rights and Health Equity

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: The intersection between human rights and disability is an area of health that is expanding as globalization progresses. The purpose of this course is to view health in a human rights context from both domestic and international perspectives. It begins with an exploratory look at the basic concepts of human rights and social justice in the global setting. It will then cover the following topics: institutional mechanisms for connecting health and human rights, health as an equity issue, globalization and health, health, human rights and law, health and disability, reproductive technology, HIV/AIDS, Gender and health equity. The course incorporates the work of High Commissioner on Human Rights in health, the UN Special Rapporteur on Health and World Health Organization and raises concerns related to both developed and developing economies. The course will survey the relationships between human rights law and health law, as well as between law and the actual practice.

HLTH 6230 3.0 Health Equity Analytic Orientations

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: Exposes students to and grounds them in a comprehensive range of analytic orientations drawn from political science including public choice, class structure, neo-institutionalism, political economy and political philosophy, to guide their approach to policy analysis as it pertains to health equity issues. Different analytic lenses used to study political behavior and public policy will be addressed and compared. These will allow students to develop a rich and in-depth fou public policy analysis that they can apply to studying health equity issues.

HLTH 5485 3.0 Public Policy and Health

Offering Unit:	New or Existing Course:	Frequency of offering:
SHPM	Existing	Bi-annually (approx)

Short course description: Introduces students to the history and proc ss of public policy making and ways to evaluate them with a focus on health. Course topics include the origins of public-policy making; the concept of the welfare state, its history and evolution; key concepts, modes and instruments in the process of public policy making; and constraints on public policy analysis along with critical analyses of relevant cases from the field of health.

ELECTIVE COURSES

Students in the HM&HDA field without a graduate level statistics course must take one as one of their electives (at this time it would be taken outside of our School). The following elective courses are existing courses but only a small number can be offered in any given year, depending on faculty availability.

HLTH 5060 3.0 Qualitative Methods for the Health Sciences
This course will strike a balance between theory and application with respect to qualitative research in the health sciences. We will examine a number of core issues surrounding qualitative research as well as four of the most common methods for analyzing qualitative data.

Opportunities for experiential learning and ‘hands on’ practice will be interwoven with the course material. These exercises/ demonstrations are intended to concretize, enhance, and enliven class discussions as well as teach analytic skills, synthesizing skills, group work and presentation skills.

HLTH 5410 3.0 Survey Design in Healthcare
This course examines various aspects of survey design and survey data collection that are relevant in different health related environments. The course focuses on both questionnaire design and implementation issues, with a focus on achieving strong response through good design and procedures. Issues of validity

and reliability of measurement are explored to the extent that they are important in survey design and measurement. Procedures and challenges associated with actual survey implementation and data collection are explored. Timely issues and challenges arising out of the confluence of research ethics and new privacy legislation along with other issues are also explored.

HLTH 5415 3.0 Drugs and Decisions: Decision Making and Pharmaceutical Policy
As Canada continues to spend an increasing percent of our health care budget on prescription drugs, it becomes more and more important to understand decision making in the pharmaceutical policy arena. This course will take a political science approach to exploring the interplay between private and public interests in making decisions around topics such as the research agenda, how drugs are priced and the system for approving new drugs and monitoring the safety and effectiveness of those on the market.

HLTH 5425 3.0 Managing E-Health
The objective is to provide the health and industry sectors with people skilled to understand the design, selection, procurement, installation, management, maintenance, and evaluation of telemedicine and eHealth systems appropriate to present and future needs.
More specific, the course objectives are:
a) to critically evaluate the role of current and emerging telemedicine and eHealth technology;
b) to critically appraise relevant information and communication technologies and network technology from a system level perspective;
c) to critically investigate the legal, regulatory, ethical and clinical aspects of telemedicine and eHealth.

HLTH 5430 3.0 Evaluation in Research
Evaluation differs from research in that it involves making practical decisions about real-life policies, programs, and practices. This course focuses on the theory and practice of evaluation as it applies to policy and equity studies in health. It considers both the similarities as well as differences of evaluation with research and reviews various paradigms and methodologies associated with the evaluation of policies in support of equity.

HLTH 5440 3.0 Globalization, Pharmaceuticals & Health Equity
Globalization in the pharmaceutical area has sparked debate about a series of issues that impact on health equity. These issues centre around two central themes: access to pharmaceuticals and ethics. The move towards a single standard for intellectual property rights world-wide has lead to significant problems in accessing pharmaceuticals in developing countries due to the lack of generic products which generate price competition. At the same time, drug companies have been unwilling to undertake research into problems largely specific to developing countries because of a lack of a market for any resulting medications. The first part of the course will explore the history of intellectual property rights (IPRs) and how and why the industry and its political supporters have been successful in strengthening IPRs. The course will then look at new initiatives to stimulate R&D in neglected diseases]. The recent effort to revise the Declaration of Helsinki and the CIOMS Guidelines on research involving human subjects are but some of the ethical controversies about how to conduct biomedical research with human subjects in developing countries. These controversies subsume the following issues: culturally appropriate practices of informed consent and subject recruitment, post-trial therapeutic commitments, models for research ethics review and questions about who should control the review process. This part of the course will address the need to conceive of and then relate ethical research practices to the different socio-cultural contexts in which they will be pursued.

HLTH 5450 3.0 Health Equity & Mental Health Policy
Involves an analysis of mental health policy from a political perspective, starting with early conceptualizations and approaches to mental health care in the 20th century. It will then explore more recent societal approaches, government initiatives and legislation in the Canadian context and draw on examples in other international contexts. Topics to be explored include: history of psychiatric care, definitions of mental health and mental illness, the meaning of therapy, legislation concerning community treatment orders and involuntary treatment, deinstitutionalization and the shift to community care, “trans-institutionalization,” mental health policy development, competence in an emergency situation, consent to treatment issues, representation issues and the interests of clients and family members, and mental health policy in international jurisdictions.

HLTH 5455 3.0 Health Equity Human Resources – Working in Care
Almost one in five Canadians have paid work in health and social services and at least an equivalent number provide unpaid care. As this labour force ages and as conditions made work in care less attractive, there is growing concern about whether there will be enough doctors and nurses to provide the care we need. At the same time, more and more care work is being relocated to the household and to unpaid, often untrained providers. Moreover, infections such as SARS have made the contributions of the non-professional staff increasingly visible, especially as more of the care work is done by non-clinical providers. These processes are profoundly gendered, with women providing over 80 per cent of the paid care and an equivalent amount of the unpaid personal care. Racialization also plays a significant role, as do factors linked to other social locations. This course will explore the conceptualization, nature, conditions and relations of care work along with planning for care, paying particular attention to multiple social locations and structural forces.

HLTH 5460 3.0 Ideological Conflicts in Health Care: Money Versus Care, Profit Versus the Public Good
The shape that a health care system takes is a reflection of various forces. One of the most defining characteristics of a system is the degree to which it is an expression of individual free enterprise versus social cohesion. These distinctions are driven by the dominant ideology of the country as expressed through its government, the union movement and the strength of private enterprise. These ideological distinctions can be expressed in features of a system such as private versus public insurance for health care, for-profit versus not-for-profit delivery of health care services, whether selling organs is allowed and the uptake of public-private initiatives. This course will use a political science model to examine these and other ideological divisions in health care both in Canada and internationally. Students will be exposed to a range of literature that looks at both sides of these issues both from a theoretical and a practical, case-based point of view.

HLTH 5465 3.0 Women & Health
Women are not only the majority of the population; they are also the majority of those who need and provide care. While there are significant differences among women in terms of their health, there are also important similarities that result not only from their bodies but also from the ways those bodies are shaped by and interpreted within social, economic and physical environments. Women have also been active in constructing both their own possibilities for health and care and the health care system. This course will explore the research on differences and their consequences for the health of both women and men. Feminist political economy focused on Canada will guide this exploration, but other perspectives and other countries will also be considered.

HLTH 5470 3.0 Intra-Hospital Information Systems
This course is designed to allow students to have an in-depth knowledge of intra-hospital health related information systems, to understand the complexity of their design, the impact they have on health care information management, as well as their integration challenges. The course investigates the challenges related to streamlining information communication inside a hospital as well as the integration of intra-hospital information systems. Students will learn how to analyze new opportunities that intra-hospital information systems provide to hospitals as well as to analyze the integration requirements of these systems.

HLTH 5475 3.0 Telemedicine Systems
The objective of this course is to provide the students with skills that will enable them to be active players in health-related organizations where they can analyze the technological and the functional requirements of a telemedicine application. In addition, students will be able to design a telemedicine system, and draw a performance evaluation plan. The course will give the students the chance to carry out a critical analysis and assessment of existing research papers in the telemedicine field; it will also convey to the students the knowledge and the necessary skills to understand the complexity of telemedicine applications.

HLST 6250 3.0 Strategic Planning in Healthcare Organizations
This course provides an objective basis for decision making. The goal of this course is to familiarize students with conceptual frameworks, debates, and developments in contemporary strategic thinking. Emphasis will be placed on the exploration of various theoretical perspectives, ideas, issues and on the sharing of knowledge through classroom discussion. Learning Objectives are (1) to provide students with useful conceptual tools to guide analysis and decision making, (2) to enhance awareness and increased

understanding of critical strategic issues facing various types of healthcare organizations, (3) to develop critical thinking skills via the application of concepts and theories to case studies (4) to stimulate students to explore and evaluate new and developing areas of strategic management theory.

HLTH 6260 Health Information Management and Systems
One of the major aims of Health Information Management is to help health professionals make better decisions. To this end, diverse models and methods of decision making and decision support have been developed and implemented in health care settings. This course reviews theories, methods, and technologies for aiding the process of making decisions in health care. This course represents a comprehensive approach of information management, record management, policy and planning. Provides students with the knowledge and skills to manage health information services in health organizations, to use computer technologies to collect, manage analyze and technically evaluate health information and work with confidential health records. This course examines also the forces outside healthcare facilities that directly affect the collection, maintenance and dissemination of health information. Topics include international trends in healthcare, federal and state government regulations, national trends in healthcare delivery and technology.

HLTH 6290 Genetics and Public Policy, Ethics, and Law
Explores the political, societal, ethical and philosophical issues concerning society's emerging understanding of genetics, its biotechnologic applications and the implications for health policy, regulation and legislation, covering a range of areas. These include the history of biotechnology, reproductive issues (prenatal and pre-implantation genetic testing) and their ethical, societal and economic implications. Other areas of exploration include gene therapy, epigenetics, cloning, genetically modified foods, biotechnology and patents (e.g. the Myriad patent on cancer gene testing), and societal legislative and policy responses. The implications of new technologies for the environment and public health care will be considered, including coverage decisions, the federal/provincial government regulatory role, and private insurance.

HLTH 6300 3.0 Political Economy of Global Health
Analyzes the process through which global health policy is developed drawing from political economy, historical and comparative perspectives. Problematizes the concept of globalization and considers how the dynamics of the modern world system emerging from the European colonial project influences health policy and drives health inequities at national and global levels. Explores the integration of scholarship, practice, and citizen activism.

New Course Proposal Form

1. **Program: Graduate Program in Health – Health Management and Health Data Analytics**

2. **Course Number:** HLTH 6XXX

3. **Credit Value:** 3.0

4. **Long Course Title:** Health Data Visualization

5. **Short Course Title:** Health Data Viz

6. **Effective Session:** Fall 2022

7. **Calendar (Short) Course Description:**
This course will introduce the fundamental concepts and principles of data visualization and its application in healthcare. We will explore the history of data visualization and its current uses in healthcare: from infographics informing patients and consumers, to EHR dashboards aiding providers in decision-making, to detailed epidemiology maps driving policymaking aimed at protecting population-health. Students will learn best practices for designing and evaluating health data visualizations, and learn to think critically about literacy, ethics, and the future of the field. By the end of this course, students will be able to use online tools to create powerful visuals that tell a story and inform diverse stakeholders.

8. **Expanded Course Description:**
The following describes the (A) course topics (B) course learning objectives, and a (C) description of experiential education (EE) and/or technology-enhanced learning activities.

A) course topics/theories

1. Importance of visuals for human understanding
2. History of (health) data visualization
3. Current uses of health data visualization
    i. When/ how and by whom are visualizations used (stakeholders)?
4. Visualization literacy (how to properly interpret visualizations)
5. Ethics of/ Bias in visualization (what are the limitations and considerations of visualizations)
6. Design principles
7. How to combine and clean data for visualizations
8. How to use Tableau to create health visualizations
9. Identify and understand the needs of various user-groups.
    i. Patients and consumers
    ii. Health care providers and Hospital mgmt.
    iii. Policy and decision makers
10. Future trends in health data visualization (AI, Big Data)

B) Course learning objectives

1) Depth and breadth of knowledge

- Demonstrate understanding of the key concepts underlying Health Data Visualization
- Engage with Visualization tools and techniques

2) Knowledge of methodologies

- Demonstrate understanding of health data visualization (e.g. which graphs are best suited for what data)
- Grasp the fundamentals of design data visualization (colours, font, layout)

3 Application of knowledge

- Employ critical analytics skills
    - when appraising real-life health visualizations
    - when analyzing health data
    - when making decisions about how to visually represent the data in order to tell a story and/or aid in decision making
- Conduct research of print, electronic, and visual resources
- Learn to use visualization technologies

4) Communications skills

- Work collaboratively and ethically with others
- Effectively research, develop, and present data visualizations
- Write rigorous, critical and convincing reports
- Constructively give peer feedback

5) Awareness of limitations of knowledge

- Understand the ethical limitations of data visualizations and specific implications for Healthcare contexts
- Understand the benefit of interprofessional collaboration (working together with designers and researchers to best convey data)

6) Autonomy and professional capacity

- Develop a disciplined and rigorous practice
- Learn to present visualizations confidently, accepting and applying constructive criticism

C) Description of experiential education (EE) and/or technology-enhanced learning activities.

The course will contain classroom-focused EE that exposes students to concrete data visualization activities in the form of “in the news” class discussions (contributing to participation grade), weekly reflection assignments, and lab exercises.

Every class will begin with some time dedicated to “in the news” where students will have a few minutes to look through recent media posts/publications and identify a recent visualization that we will dissect collectively as a class. Individually, students will be required to find real-world examples and apply concepts and theories covered each week, summarizing their thoughts in 5 brief “reflection assignments” that will be submitted online. Lab exercises will be completed collaboratively in teams, a real dataset will be provided and teams will be encouraged to create appropriate visualization for their target audience using online tools and techniques learned in class, and present the following week. Students are expected to respectfully provide feedback to their peers and submit their work online for correction and feedback.

Note that special computer labs will not be required for this course. Online software (Tableau) will be used which is free to students. Use of online software can sustain capacity in data visualization that students build during the course.

Lab exercises will allow student to achieve the following learning outcomes

1- Engage with multiple data visualization techniques (infographics, graphs, dashboards, maps)
2- Grasp the fundamentals of design related to data visualization
3- Provide students with "real" messy data to learn to clean and analyze
4- Work collaboratively and ethically with others
5- Effectively research, develop, present, and give peer feedback on visualizations in healthcare
6- Meet deadlines and develop a rigorous discipline

In addition, guest lecturers will be invited to the class when possible, to review and interact with the students about concrete health data visualization applications and (un)successful cases (E.g., invite UX designers of EHR dashboards, and patient reports on smartphone apps).

9. Course Learning Outcomes

After completion of the course students will be able to:

- **Apply theoretical and practical knowledge** of Data Visualization in Healthcare
- **Evaluate Data Visualizations** in Healthcare (e.g. in research papers, government inforgraphics) according to their expressiveness and effectiveness
- Be able to **understand (literacy) and identify bias (ethics etc.)** in health visualizations
- **Choose appropriate visualization tools** and methods for a given data set and presentation problem
- **Inspect Accuracy**, Discriminability, Salience, and Separability, and their implications for design.
- Examine, navigate, and **learn to use the various features of Tableau** (or other online tools)
- Combine the data to and follow the **best practices to present your story**
- **Create and design visualizations and dashboards** for diverse audiences using Tableau (or other online tools)

10. Rationale:

"The purpose of computing is insight, not numbers."

Health care is becoming more data driven than ever before. The collection, organization, and interpretation of increasingly large volumes and types of data from multiple sources is integral to nearly every aspect of healthcare.

From replacing a patient's medical chart with a lifelong electronic medical record, to wearable devices that capture quantified self, alongside an expanding trove of digital data captured through social media, geographic information systems (GIS) and advancements in research (e.g. DNA sequencing of data), and technologies (such as biomedical imaging and Machine learning for health), data is growing in volume and diversity making analysis and interpretation increasingly complex. Healthcare professionals, researchers, patients, families, caregivers, and consumers need information to be presented in an accessible, useful, and usable manner.

Data visualization is the graphical representation of information and data. By using visual elements like icons, charts, graphs, and maps, data visualization tools provide an accessible and engaging way to see and understand trends, outliers, and patterns in data. Data visualization helps to tell stories by curating data into a form easier to understand, helping diverse stakeholders make more informed decisions. Today every hospital uses data visualization solutions to manage their in-house process ranging from maintaining the patient record, to capacity planning, every smartphone health app uses data visualizations to push "personalized goals" to their consumers in the hope that they will change their

behaviours, and local and national governments employ interactive maps to try and educate citizens and manage the spread of disease across entire countries and the world, as was the case with the COVID-19 pandemic.

This course aligns with the faculty educational objectives, providing up-to-date content using cutting edge technologies, and preparing students with hands-on skills that are highly marketable in the workplace. Students will further their critical thinking, data literacy, visualization, and presentation skills, as well as gain experience using novel technologies, and EE experience; all of which are core to the SHPM objectives and will prepare students to fill a need for data analytics skills in the healthcare system. There are no other graduate courses on offer that focus on health data visualization.

This course, along with another new course on Maching Learning in Health constitute two of the new field-specific courses in the new field in health management and health data analytics in the Graduate Program in Health. These two analytics oriented courses are unique to the program and complement existing health management and knowledge utilization courses already approved in the program.

The Graduate Program in Health's learning outcomes are included in Appendix X.

11. Evaluation:

Assignment	Percentage Value
The Good, the Bad, and the Ugly of Data Visualization	20%
5 weekly reflections, 6% each	30%
3 Tableau visualization assignments - > different stakeholder groups, 5% each	15%
data for patients & consumers	5%
data for healthcare providers & healthcare/ hospital mgmt	5%
data for policy & decision makers	5%
Final project: Pick data set (your capstone?), make visualization, explain choices	30%
Final Paper	20%
Final presentation	10%
Participation (attendance, "In the news", class conversations/ contributions)	5%
TOTAL	**100**

12. Integrated Courses:

N.A.

13. Crosslisted Courses:

N.A.

14. Faculty Resources:

Faculty members qualified to teach this course: Lora Appel; Liane Ginsburg; Hannah Wong
Frequency with which you expect this course to be offered: Approximately every other year.

We have several health informatics and health management faculty members with the School equipped to teach at the graduate and undergraduate levels. Offering this course in alternate years will not detract from the School's ability to continue to have full-time faculty deliver undergraduate health studies courses. The addition of this area to our graduate program will also help alleviate currently high supervision loads experienced by SHPM faculty members in the health policy and equity area and allow us to share faculty supervision resources more equitably across the School.

15. Physical Resources:

No additional physical resources are needed.

16. Bibliography and Library Statement:

session	topic	assignment
1	"A picture is worth 1000 words"	
2	History and current uses of (Health) Data Visualization	weekly reflection 1
3	From Data to Viz	weekly reflection 2
4	Data visualization literacy and ethics	weekly reflection 3
5	Design Principles	good bad ugly
6	Introduction to tools (e.g. Tableau) + Lab work	weekly reflection 4
7	Visualizations for Patients & Consumers + Lab work	Tableau assignment i
8	Visualization for Providers & Healthcare/Hospital mgmt + Lab work	Tableau assignment ii
9	Visualization for Policy & Decision Makers + Lab work	Tableau assignment iii
10	Future of data visualization	weekly reflection 5
11	Final Project Prep/ Bonus show and tell	
12	Final Presentations	Final Projects & Presentations

Books (or chapters in books) under consideration:

Wexler, S., Shaffer, J., & Cotgreave, A. (2017). *The big book of dashboards: visualizing your data using real-world business scenarios*. John Wiley & Sons.

Steele, J., & Iliinsky, N. (2010). *Beautiful visualization: looking at data through the eyes of experts*. " O'Reilly Media, Inc.".

Session 1: "A picture is worth 1000 words"

Evergreen, S., & Metzner, C. (2013). Design principles for data visualization in evaluation. *New directions for evaluation*, *2013*(140), 5-20. Accessed from: https://onlinelibrary.wiley.com/doi/pdf/10.1002/ev.20071?casa_token=dRbsGsfBofMAAAA:rdWyPYM6lvS5ci0F2QIAowBW6g-JZVUHXv1szVMBMnkBHbla8LivR4PG5Jak5R3vOjLCtXdvG8q_Gu8

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Shneiderman, B., Plaisant, C., & Hesse, B. W. (2013). Improving healthcare with interactive visualization. *Computer*, *46*(5), 58-66. doi: 10.1109/MC.2013.38. URL: https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6415893&casa_token=rGFi8pt-HiEAAAAA:XhrbNbMF1ffUQv18Q4UXxZVGo9Csx70LfM2n0nsvpdNG5t1ikomPP78eRelCWe_ff7GKbXlWsQ

Martin, L. J., Turnquist, A., Groot, B., Huang, S. Y., Kok, E., Thoma, B., & van Merriënboer, J. J. (2019). Exploring the role of infographics for summarizing medical literature. *Health Professions Education*, *5*(1), 48-57. URL: https://www.sciencedirect.com/science/article/pii/S2452301117300792

Session 2: History and current uses of (Health) Data Visualization

Friendly, M. (2008). A brief history of data visualization. In *Handbook of data visualization* (pp. 15-56). Springer, Berlin, Heidelberg.

Tableau. (n.d.) The 5 Most Influential Vizzes of All Time [White paper]. (https://www.tableau.com/sites/default/files/whitepapers/5_most_influential_visuals_wp.pdf

Comello MLG, Qian X, Deal AM, Ribisl KM, Linnan LA, Tate DF (2016). Impact of Game-Inspired Infographics on User Engagement and Information Processing in an eHealth Program J Med Internet Res 2016;18(9):e237 URL: https://www.jmir.org/2016/9/e237 DOI: 10.2196/jmir.5976 PMID: 27658469 PMCID: 5054233

Strecker, J. (2012). Data visualization in review: summary; evaluating IDRC results-communicating research for influence. Accessed from: https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/55598/IDL-55598.pdf?sequence=1

Session 3: From Data to Viz

Nevo, D. (2014). *Making sense of data through statistics - An introduction*: Legerity Digital Press.

Dunlap, J. C., & Lowenthal, P. R. (2016). Getting graphic about infographics: design lessons learned from popular infographics. *Journal of Visual Literacy*, *35*(1), 42-59. URL: https://www.tandfonline.com/doi/pdf/10.1080/1051144X.2016.1205832

Pettiross, J. Tableau. (n.d.) How to Build Dashboards that Persuade, Inform, and Engage. [White paper]. (https://www.tableau.com/sites/default/files/whitepapers/goodenoughtogreat.pdf)

Healy, Y. (2018). Find the graphic you need. Retrieved January 31, 2021, from https://www.data-to-viz.com/

Ferdio. (n.d.). Collection of data visualizations to get inspired and finding the right type. Retrieved January 31, 2021, from https://datavizproject.com/

Session 4: Data visualization literacy and ethics

McCrorie, A. D., Donnelly, C., & McGlade, K. J. (2016). Infographics: healthcare communication for the digital age. *The Ulster medical journal*, *85*(2), 71. URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4920488/

Arcia, A., Suero-Tejeda, N., Bales, M. E., Merrill, J. A., Yoon, S., Woollen, J., & Bakken, S. (2016). Sometimes more is more: iterative participatory design of infographics for engagement of community members with varying levels of health literacy. *Journal of the American Medical Informatics Association : JAMIA*, *23*(1), 174–183. https://doi.org/10.1093/jamia/ocv079

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Hepworth, K., & Church, C. (2018). Racism in the Machine: Visualization Ethics in Digital Humanities Projects. *DHQ: Digital Humanities Quarterly*, *12*(4).

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Session 5: Design Principles

Few, S., & Edge, P. (2008). Practical rules for using color in charts. *Visual Business Intelligence Newsletter*, *11*. Accessed from: https://nbisweden.github.io/Rcourse/files/rules_for_using_color.pdf

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Session 6: Introduction to tools (e.g. Tableau)

Tableau. (n.d.). Welcome to Tableau Desktop. Retrieved January 31, 2021, from https://www.tableau.com/learn/get-started/creator

Tableau. (n.d.). Next steps. Retrieved January 31, 2021, from https://help.tableau.com/current/guides/get-started-tutorial/en-us/get-started-tutorial-next.htm

Session 7: Viz for Patients & Consumers

Browne S, Behzadi Y, Littlewort G. Let Visuals Tell the Story: Medication Adherence in Patients with Type II Diabetes Captured by a Novel Ingestion Sensor Platform JMIR Mhealth Uhealth 2015;3(4):e108 URL: https://mhealth.jmir.org/2015/4/e108 DOI: 10.2196/mhealth.4292

Theis S, Rasche P, Bröhl C, Wille M, Mertens A Task-Data Taxonomy for Health Data Visualizations: Web-Based Survey With Experts and Older Adults. JMIR Med Inform 2018;6(3):e39 URL: https://medinform.jmir.org/2018/3/e39 DOI: 10.2196/medinform.9394

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Session 8: Viz for Providers & Healthcare mgmt/ Hospitals

Stadler, J. G., Donlon, K., Siewert, J. D., Franken, T., & Lewis, N. E. (2016). Improving the efficiency and ease of healthcare analysis through use of data visualization dashboards. *Big Data*, *4*(2), 129-135.

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Session 9: Viz for Policy & Decision Makers

Concannon, D., Herbst, K., & Manley, E. (2019). Developing a data dashboard framework for population health surveillance: widening access to clinical trial findings. JMIR formative research, 3(2), e11342. Accessed from: https://formative.jmir.org/2019/2/e11342

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Session 10: Future of data visualization

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Please submit completed forms and required supporting documentation by email to the Coordinator, Faculty Governance – fgsgovrn@yorku.ca

New Course Proposal Form

The following information is required for all new course proposals. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. **Program: __Graduate Program in Health – Health Management and Health Data Analytics**

2. **Course Number:** HLTH 6XXX

3. **Credit Value:** 3.0

4. **Long Course Title:** Machine Learning for Health

5. **Short Course Title:** Machine Learning for Health

6. **Effective Session:** Fall 2022

7. **Calendar (Short) Course Description:**
This course will introduce the fundamental concepts and principles of machine learning and its application in healthcare. We will explore machine learning approaches, health cases in relation to machine learning, and best practices for designing, building, and evaluating machine learning applications in healthcare. Opportunities and challenges that machine learning present for health and society will be covered.

8. **Expanded Course Description:**
The following describes the (1) course topics (2) course learning objectives, and a description of experiential education (EE) and/or technology-enhanced learning activities.

a) course topics/theories

1. Healthcare and Decision Making
2. Analytics Building Blocks: Descriptive, Predictive and Prescriptive Analytics
3. Statistical Analysis and Machine Learning
4. Linear and Logistic Regression
5. Integrated development Environments for Machine Learning
6. Neural Networks
7. Support Vector Machine
8. Unsupervised Learning
9. Dimensionality Reduction
10. Evaluations of Machine Learning Applications in Healthcare
11. AI deployment

b) Course learning objectives

1) Depth and breadth of knowledge

1- Demonstrate understanding of the key concepts underlying Machine Learning
2- Engage with multiple Machine Learning techniques

2) Knowledge of methodologies

1- Demonstrate critical understanding of the technological advancements in Machine Learning in Healthcare
2- Grasp the fundamentals of the algorithms related to Machine Learning

3 Application of knowledge
1- Employ critical analytics skills
2- Conduct research of print, electronic, and visual resource texts

4) Communications skills
1- Work collaboratively and ethically with others
2- Effectively research, develop, present, and give peer feedback on Machine Learning projects in Healthcare
3- Write rigorous reports

5) Awareness of limitations of knowledge
1- Understand the limits of Machine Learning in Healthcare
2- Understand the ethical limitations of Machine Learning in Healthcare

6) Autonomy and professional capacity
1- Develop a disciplined and rigorous practice

c) Description of experiential education (EE) and/or technology-enhanced learning activities.

The course will contain classroom-focused EE that exposes students to concrete machine learning activities in the form of lab exercises and case studies. Students will be required to reflect on both and will be asked to submit at the end of each session a writeup to answer specific questions related to the concepts and theories being covered in the course. In addition, guest lecturers will be invited to the class to interact with the students about concrete Machine Learning applications in Healthcare. Lab exercises will allow student to achieve the following learning outcomes:

1- Engage with multiple Machine Learning techniques
2- Grasp the fundamentals of the algorithms related to Machine Learning
3- Employ critical Machine Learning skills
4- Analyze, discuss, and communicate clearly in a range of Machine Learning problems and solutions in healthcare
5- Work collaboratively and ethically with others
6- Effectively research, develop, present, and give peer feedback on Machine Learning applications in healthcare
7- Meet deadlines and develop a rigorous discipline

Case studies consist of real-life situation that demands Machine Learning based solutions, students need to work in group to find the different Machine Learning approaches that can be used to address the problem, and to choose one approach based on a clear rationale.

In both case studies and lab exercises, student will work collaboratively in groups; they will be able to present their findings in class and submit the results for correction and feedback.

Special computer labs will not be required for this course. Free self-install software will be used to enable students to continuously have access to machine learning capacity at home and work independently. Weka, Anaconda, and Jupyter are examples of such integrated development environments. The first lab would be dedicated to installation and use of the software.

9. Course Learning Outcomes

After completion of the course students will be able to:

1- Apply theoretical and practical knowledge of Machine Learning in Healthcare
2- Apply practical knowledge of available Machine Learning software
3- Assess Health outcomes using Machine Learning techniques
4- Choose appropriate Data Visualization tools
5- Evaluate Machine Learning Applications in Healthcare
6- Analyze, discuss, and communicate clearly in a range of Machine Learning related problems and solutions in healthcare

10. Rationale

With Machine Learning and Artificial Intelligence applications thriving in the healthcare domain, professionals working in the healthcare industry are faced with both opportunities and challenges. This course introduces the principles of Machine Learning and their applications in healthcare.

This course equips students with in-depth understanding on the data use and Machine Learning techniques as well as with skills needed in the domain. It contributes to furthering the students critical thinking, data skills, Machine Learning skills, technological innovation, presentation skills, group work, EE experience; all of which are core to the program objectives and prepare students to fill a need for data analytics skills in the healthcare system.

The course aligns with the faculty educational objectives to provide students with excellent educational experience via up-to-date content using cutting edge technologies, as well as providing students with marketable skills.

This course, along with another new course on Data Visualization constitute two of the new field-specific courses in the new field in health management and health data analytics in the Graduate Program in Health. These two analytics-oriented courses are unique to the program and complement existing health management and knowledge utilization courses already approved in the program.

The Graduate Program in Health's learning outcomes are included in Appendix X.

11. Evaluation:

Please supply a detailed breakdown of course requirements, including the type and percentage value of each assignment. The expectation is that course assignments can normally be accomplished within the course period. If applicable, details regarding expectations and corresponding grading requirements with respect to attendance and participation should be provided.

Assignment	**Percentage value**
Reflection (eClass Discussion forum / Journal)	10%
Lab exercises (Lab assignments)	25%
Term paper (research paper)	25%
Project (report 30% and presentation 10%)	40%

12. Integrated Courses:

N.A.

13. Crosslisted Courses:

N.A.

14. Faculty Resources:

Faculty members qualified to teach this course: Christo El Morr and Serban Dinca
Frequency with which you expect this course to be offered: Approximately every second year.

We have several health informatics faculty members with the School equipped to teach at the graduate and undergraduate levels. Offering this course in alternate years will not detract from the School's ability to continue to have full-time faculty deliver undergraduate health informatics courses. The addition of this area to our graduate program will also help alleviate currently high supervision loads

experienced by SHPM faculty members in the health policy and equity area and allow us to share faculty supervision resources more equitably across the School.

15. Physical Resources:

The lab already in place in HNE B02 is adequate to run the labs related to this course. No additional physical resources are needed.

16. Bibliography and Library Statement:

Please provide an appropriate and up-to-date bibliography in standard format. A statement from the University librarian responsible for the subject area certifying that adequate library resources are available for the new course must be provided.

1. Healthcare and Decision Making
2. Analytics Building Blocks: Descriptive, Predictive and Prescriptive Analytics
3. Statistical Analysis and Machine Learning
4. Linear and Logistic Regression
5. Integrate development Environments for Machine Learning
6. Neural Networks
7. Support Vector Machine
8. Unsupervised Learning
9. Dimensionality Reduction
10. Evaluations of Machine Learning Applications in Healthcare
11. AI deployment

Session 1: Healthcare and Decision Making

El Morr, C., Ginsburg, L., Nam, S., & Woollard, S. (2017). Assessing the Performance of a Modified LACE Index (LACE-rt) to Predict Unplanned Readmission After Discharge in a Community Teaching Hospital. *Interact J Med Res, 6*(1), e2. doi:10.2196/ijmr.7183

Khalifa, M., & Zabani, I. (2016). Utilizing health analytics in improving the performance of healthcare services: A case study on a tertiary care hospital. *Journal of Infection and Public Health, 9*(6), 757-765. doi:https://doi.org/10.1016/j.jiph.2016.08.016

Al Hamouche, V. (2014). Making Quality Control Decisions in Radiology Department: A Decision Support System for Radiographers' Performance Appraisal Using PACS. In M. Christo El (Ed.), Research Perspectives on the Role of Informatics in Health Policy and Management (pp. 48-61). Hershey, PA, USA: IGI Global.

Session 2: Building Blocks

Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). *Data Mining: Practical Machine Learning Tools and Techniques*: Elsevier Science.

Santos, R. S., Malheiros, S. M., Cavalheiro, S., & de Oliveira, J. M. (2013). A data mining system for providing analytical information on brain tumors to public health decision makers. *Comput Methods Programs Biomed, 109*(3), 269-282. doi:10.1016/j.cmpb.2012.10.010

Rose Business Technologies. (2013, February 7, 2013). Descriptive Diagnostic Predictive Prescriptive Analytics Retrieved from http://www.rosebt.com/blog/descriptive-diagnostic-predictive-prescriptive-analytics

Khalifa, M. (2015). Developing an Emergency Physician Productivity Index Using Descriptive Health Analytics. *Stud Health Technol Inform, 213*, 167-170.

Wagenen, J. V. (2017). 3 Big Data Trends in Healthcare Using Predictive Analytics. https://healthtechmagazine.net/article/2017/11/predicting-analytics-3-big-data-trends-healthcare

Safaee, M. M., Scheer, J. K., Ailon, T., Smith, J. S., Hart, R. A., Burton, D. C., . . . Ames, C. P. (2018). Predictive modeling of length of hospital stay following adult spinal deformity correction: Analysis of 653 patients with an accuracy of 75% within 2 days. *World Neurosurg*. doi:10.1016/j.wneu.2018.04.064

Chalmers, E., Hill, D., Zhao, V., & Lou, E. (2015). Prescriptive analytics applied to brace treatment for AIS: a pilot demonstration. *Scoliosis, 10*(Suppl 2), S13. doi:10.1186/1748-7161-10-s2-s13

Rose Business Technologies. (2013, February 7, 2013). Descriptive Diagnostic Predictive Prescriptive Analytics Retrieved from http://www.rosebt.com/blog/descriptive-diagnostic-predictive-prescriptive-analytics

Session 3: Statistical Analysis and Machine Learning

Nevo, D. (2014). *Making sense of data through statistics - An introduction*: Legerity Digital Press.

Badillo, S., Banfai, B., Birzele, F., Davydov, II, Hutchinson, L., Kam-Thong, T., . . . Zhang, J. D. (2020). An Introduction to Machine Learning. *Clin Pharmacol Ther, 107*(4), 871-885. doi:10.1002/cpt.1796

Jamthikar, A., Gupta, D., Saba, L., Khanna, N. N., Araki, T., Viskovic, K., . . . Suri, J. S. (2020). Cardiovascular/stroke risk predictive calculators: a comparison between statistical and machine learning models. *Cardiovasc Diagn Ther, 10*(4), 919-938. doi:10.21037/cdt.2020.01.07

Session 4: Linear Regression and Logistic Regression

Misra, D. P., Zimba, O., & Gasparyan, A. Y. (2021). Statistical data presentation: a primer for rheumatology researchers. *Rheumatology International, 41*(1), 43-55. doi:10.1007/s00296-020-04740-z

Monahan, J. F. (2008). *A Primer on Linear Models*: CRC Press.

Session 5: Integrate development Environments for Machine Learning

Grolemund, G., & Wickham, H. (2016). *R for Data Science* (1 ed.): O'Reilly Media, Inc.

Ohri, A. (2017). *Python for R Users* (1 ed.): Wiley.

Session 6: Neural Networks

Neural networks in healthcare : potential and challenges. (2006). Hershey, PA: Idea Group Pub.

Xie, X., Li, X., Wan, S., & Gong, Y. (2006). Mining X-Ray Images of SARS Patients. In G. J. Williams & S. J. Simoff (Eds.), *Data Mining: Theory, Methodology, Techniques, and Applications* (pp. 282-294). Berlin, Heidelberg: Springer Berlin Heidelberg.

Raeisi Shahraki, H., Bemani, P., & Jalali, M. (2017). Classification of Bladder Cancer Patients via Penalized Linear Discriminant Analysis. *Asian Pac J Cancer Prev, 18*(5), 1453-1457. doi:10.22034/apjcp.2017.18.5.1453

Session 7: Support Vector Machine

Sun, X., Su, S., Zuo, Z., Guo, X., & Tan, X. (2020). Modulation Classification Using Compressed Sensing and Decision Tree-Support Vector Machine in Cognitive Radio System. *Sensors (Basel), 20*(5). doi:10.3390/s20051438

Farhadian, M., Shokouhi, P., & Torkzaban, P. (2020). A decision support system based on support vector machine for diagnosis of periodontal disease. *BMC Res Notes, 13*(1), 337. doi:10.1186/s13104-020-05180-5

Session 8: Unsupervised Learning

Jain, V., & Chatterjee, J. M. (2020). *Machine Learning with Health Care Perspective: Machine Learning and Healthcare*: Springer International Publishing.

Cleophas, T. J. M., & Zwinderman, A. H. (2020). *Machine Learning in Medicine -- a Complete Overview*: Springer.

Session 9: Dimensionality Reduction

Jain, V., & Chatterjee, J. M. (2020). *Machine Learning with Health Care Perspective: Machine Learning and Healthcare*: Springer International Publishing.

Cleophas, T. J. M., & Zwinderman, A. H. (2020). *Machine Learning in Medicine -- a Complete Overview*: Springer.

Session 10: Evaluations of Machine Learning Applications in Healthcare

Kelly, C. J., Karthikesalingam, A., Suleyman, M., Corrado, G., & King, D. (2019). Key challenges for delivering clinical impact with artificial intelligence. *BMC Medicine, 17*(1), 195. doi:10.1186/s12916-019-1426-2

Sidey-Gibbons, J. A. M., & Sidey-Gibbons, C. J. (2019). Machine learning in medicine: a practical introduction. *BMC Med Res Methodol, 19*(1), 64. doi:10.1186/s12874-019-0681-4

Tohka, J., & Gils, M. (2020). Evaluation of machine learning algorithms for Health and Wellness applications: a tutorial. *ArXiv, abs/2008.13690*.

Session 11: AI deployment

Carlile, M., Hurt, B., Hsiao, A., Hogarth, M., Longhurst, C. A., & Dameff, C. (2020). Deployment of artificial intelligence for radiographic diagnosis of COVID-19 pneumonia in the emergency department. *Journal of the American College of Emergency Physicians Open, 1*(6), 1459-1464. doi:https://doi.org/10.1002/emp2.12297

Campion, A., Hernandez, M. G., Jankin, S. M., & Esteve, M. (2020). Managing Artificial Intelligence Deployment in the Public Sector. *Computer, 53*(10), 28-37. doi:10.1109/MC.2020.2995644

He, M., Li, Z., Liu, C., Shi, D., & Tan, Z. (2020). Deployment of Artificial Intelligence in Real-World Practice: Opportunity and Challenge. *The Asia-Pacific Journal of Ophthalmology, 9*(4). Retrieved from https://journals.lww.com/apjoo/Fulltext/2020/08000/Deployment_of_Artificial_Intelligence_in.5.aspx

Session 12: Presentations

Students' in-class project presentations.

Please submit completed forms and required supporting documentation by email to the Coordinator, Faculty Governance – fgsgovrn@yorku.ca

YORK UNIVERSITY LIBRARIES

Scott Research and Collections

310 Scott Library
4700 Keele St.
Toronto ON
Canada M3J 1P3
Tel 416 736 2100
Ext. 20073
Fax 416 736 5920
www.library.yorku.ca/

Memo

To: Professor Liane Ginsburg, Chair, School of Health Policy and Management

From: Thumeka Mgwigwi, Teaching and Learning Librarian, Scott Library

Date: 19 February 2021

Subject: Library Statement for Health Data Visualization

I have reviewed the course proposal material for *Health Data Visualization.* I am happy to report that York University Libraries will be able to support this course. A majority of the titles in the bibliography are already held at York in both print and electronic format. Titles not held a York have been ordered. A quick search of the York Libraries resources revealed more sources related health data visualization and that includes both journals and monographs in print and electronic format.

For further research, students can use the online catalogue, periodical indexes and resources like Scholars GeoPortal. More resources can be found in the Geospatial Data and Health Studies and Global Health research guides found here: https://researchguides.library.yorku.ca/?b=s

York University Libraries is equipped with subject librarians specializing in a wide array of subject areas like Health, Nursing, Research Data Management, Data and Statistics. These librarians are always available to support students' research needs.

Students also have access to the Resource Sharing Department to request materials not held at York Libraries.

YORK UNIVERSITY LIBRARIES

Scott Research and Collections

310 Scott Library
4700 Keele St.
Toronto ON
Canada M3J 1P3
Tel 416 736 2100
Ext. 20073
Fax 416 736 5920
www.library.yorku.ca/

Memo

To: Professor Liane Ginsburg, Chair, School of Health Policy and Management

From: Thumeka Mgwigwi, Teaching and Learning Librarian, Scott Library

Date: 19 February 2021

Subject: Library Statement for Machine Learning for Health

I have reviewed the course proposal material for *Machine Learning for Health.* I am happy to report that York University Libraries will be able to support this course. A majority of the titles in the bibliography are already held at York in both print and electronic format. Titles not held a York have been ordered. A quick search of the York Libraries resources revealed more sources related to machine learning and healthcare and that includes both journals and monographs in print and electronic format.

For further research, students can use the online catalogue and periodical indexes like Medline, Scopus, Web of Science, General Science Abstracts, to name a few. More resources can be found in the Health Studies and Global Health and Computer Science research guides found here: https://researchguides.library.yorku.ca/?b=s

York University Libraries is equipped with subject librarians specializing in a wide array of subject areas like Health, Nursing, Computer Science, Data and Statistics. These librarians are always available to support students' research needs.

Students also have access to the Resource Sharing Department to request materials not held at York Libraries.

Appendix A5

Graduate Program in Health – Program Learning Outcomes

The Degree level expectations in the left-hand column of this table adhere to the structure specified by the Ontario Universities Council on Quality Assurance. The Program learning outcomes below are taken from the Graduate Program in Health Self-study completed in the Fall of 2020 as part of our School's Cyclical Program Review. Yellow highlighted text reflects minor edits required to ensure the PLOs align with the proposed new field in health management and health data analytics.

Degree Level Expectations	**MA in Health** **Health Policy and Equity Field** **Program Learning Outcomes** This degree is awarded to students who have demonstrated the following skills and abilities:	**PhD in Health** **Health Policy and Equity Field** **Program Learning Outcomes** This degree extends the skills associated with acquiring a Master of Arts degree and is awarded to students who have demonstrated the following skills and abilities:
Depth & breadth of knowledge	PLO MA 1: Articulate a systematic understanding of leading-edge multi-disciplinary concepts, approaches and issues in the study of health policy and equity OR health system decision making / data analytics problems.	PLO PhD 1: Articulate a thorough understanding of a substantial body of multi-disciplinary concepts, approaches and issues at the leading edge of the field to inform the study of health policy and equity OR health system decision making / data analytics problems.
Research and scholarship	PLO MA 2: Assess and analyze scholarly literature and information related to health issues, policies, norms, laws, organizations, services, health system decision making and the social determinants of health using analytical frameworks associated with various research methods.	PLO PhD 2: Select from and apply multi-disciplinary concepts and approaches that inform the research process in a way that confirms, refines or extends knowledge in the field of health policy and equity OR health system decision making / data analytics.
Level of application of knowledge	PLO MA 3: Employ appropriate methodology and analytical frameworks to carry out research that demonstrates originality in the application of knowledge and the ability to develop and support a sustained argument	PLO PhD 3: Navigate theoretical, practical, and ethical challenges while conceptualizing and conducting original scholarly investigation to generate new knowledge of suitable quality for peer review and that merits presentation / publication.
Professional capacity / autonomy	PLO MA 4: Demonstrate initiative, personal responsibility and accountability, the capacity for complex decision-making, and intellectual independence necessary for employment. PLO MA 5: Exhibit ethical behaviour consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; PLO MA 6: Recognize the broader implications of sharing and applying knowledge to particular contexts and receiving feedback in a constructive manner.	PLO PhD 4: Demonstrate autonomous initiative in complex situations, intellectual independence and engagement with the field, ethical behaviour and academic integrity necessary for employment. PLO PhD 5: Provide, receive and act on constructive peer review to enhance the quality of one's peer's and one's own academic work. PLO PhD 6: Evaluate the broader implications of sharing and applying knowledge in and to particular contexts.

Level of communications skills	PLO MA 7: Clearly, accurately and concisely communicate ideas, issues and research findings and justify conclusions about health research questions in oral, written, chart and diagram formats.	PLO PhD 7: Clearly, accurately and concisely communicate complex ideas, arguments, and research findings and justify conclusions about health research questions in oral, written, chart and diagram formats.
Awareness of limits of knowledge	PLO MA 8: Articulate awareness of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines/perspectives.	PLO PhD 8: Recognize the limitations of one's own work, training, and discipline, as well as the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines/perspectives.

How the program curriculum and structure support the achievement of the program learning outcomes

Course work requirements primarily enable students to achieve PLOs associated with obtaining *Depth and breadth of knowledge, Application of knowledge* (e.g., through writing a policy brief, critically appraising a study, and *Communication skills*.

Students in the **MA program** are required to complete an MRP proposal, ethics review (if required) and a Major Research Paper that will provide an original contribution to health research. Graduation with an MA degree requires that students have a final discussion to their supervisory committee. For **PhD students**, The first comprehensive paper reviews the major literature in the field while the second comprehensive paper reviews the literature with a focus on the content area of their dissertation research and includes a 5 to 10-page methodological appendix oriented towards the methodologies to be applied in the PhD thesis. The dissertation research involves a significant and original contribution to the specific area identified in the thesis proposal. These contributions are in the form of both collection and analysis of new or existing data and the organization of the research with an interdisciplinary approach that distinguishes the field from other existing graduate programs in the area of health. The dissertation can be a traditional one or involve the preparation of three or four manuscripts of publishable quality. The MRP proposal and comprehensive papers as well as the MRP and Dissertation ensure students achieve PLOs associated with all degree level expectations, but uniquely promote the *Application of knowledge, Autonomy*, and *Awareness of limits of knowledge*.

Lastly, specific training workshops (e.g., how to successfully prepare and defend your MRP, comprehensive exam, or PhD thesis) integrated into the Professional Development Series facilitates achievement of PLOs associated with both *Professional capacity* and *Communication*.

MAP. To illustrate how the proposed requirements will support the achievement of program learning objectives a map of the program requirements to the program learning outcomes is included on the next two pages.

MA in Health
MAP of Curriculum Requirements to PLOs

	Degree Level Expectations							
	Depth and Bredth of Knowledge	Research & Scholarship	Level of Application of Knowledge	Professional Capacity & Autonomy			Level of Communications Skills	Awareness of Limits of Knowledge
	Program Learning Outcomes							
Masters Degree Program Components, Skills & Activities	PLO-MA 1	PLO-MA 2	PLO-MA 3	PLO-MA 4	PLO-MA 5	PLO-MA 6	PLO-MA 7	PLO-MA 8
Participate in Class Discussions								
Complete analyses / reflections on course readings / topics								
Facilitate / present in seminars								
Complete course papers								
COURSE WORK to understand fundamentals / recognize the impact of social relations, political, social, economic, legal, contexts on health (e.g. HLTH5030, 5050, 6210)								
Understand how to apply levels of analysis in research (e.g. HLTH5405)								
MRP work to select from and apply a **variety of analytic approaches** and **methods** that match research question(s) and contexts								
MRP work to synthesize and critically **evaluate current research, information literature and data** using literature review, policy analysis and data analysis methods								
MRP work to frame researchable questions that investigate an original problem								
COURSE WORK to understand the fundamentals of research design and qualitative, quantitative, and mixed research methods (e.g.HLTH 5405)								
MRP work to to help recognize when research does and does not require **ethical approval** (e.g. such as when conducting research with human subjects)								
COURSE (*) WORK								
Proposal								
MRP								
MRP Discsussion								
esent at **Graduate Research Day**								

PhD in Health
MAP of Curriculum Requirements to PLOs

	Degree Level Expectations							
	Depth and Bredth of Knowledge	Research & Scholarship	Level of Application of Knowledge	Professional Capacity & Autonomy			Level of Communications Skills	Awareness of Limits of Knowledge
	Program Learning Outcomes							
Doctoral Degree Program Components, Skills & Activities	PLO-PhD 1	PLO-PhD 2	PLO-PhD 3	PLO-PhD 4	PLO-PhD 5	PLO-PhD 6	PLO-PhD 7	PLO-PhD 8
Participate in Class **Discussions**								
Complete **analyses / reflections** on course readings / topics								
Facilitate / present in seminars								
Complete course **papers**								
Dissertation work to frame researchable questions that investigate an original problem								
COURSE WORK to understand fundamentals / recognize the impact of social relations, political, social, economic, legal, contexts on health (e.g. HLTH5030, 5050, 6210)								
Dissertation work to contribute to the **development of academic skills, techniques, practices, ideas, theories, and approaches** that advance the field								
Understand how to apply levels of analysis in research and how they are used differently depending on the field (Proposal + HLTH5405)								
Synthesize and critically **evaluate research, information, literature and data**								
Select and/or develop **reliable, valid instruments, measures and indicators** of health and health equity								
Recognize the **ethical issues** relating to all aspects of the research enterprise								
Have an advanced understanding of how to develop and apply a **research design** + conduct qualitative, quantitative, and mixed **research methods** + **literature review**								
COURSE (*) WORK								
PROPOSAL								
COMPREHENSIVES								
THESIS								
Present at **Graduate Research Day**								

Existing Program/Graduate Diploma Information (change from)	Proposed Program/Graduate Diploma Information (change to)
HEALTH ~~The Graduate Program in Health offers MA and PhD degrees in the **Health Policy & Equity** area, emphasizing equity in health through policies that are directed at the social causes of inequality in health and the organization and delivery of health care.~~ Health equity is explored through a range of theoretical, empirical, interdisciplinary, and experiential orientations, supported by York's thematic strength in social justice. ~~Health equity issues are dealt with at the local, national and international levels incorporating developing nations~~. The program is interdisciplinary, incorporating perspectives from political science, law, economics, sociology, history and ethics. ~~Students develop a strong theoretical foundation to critically analyze the political and economic forces that shape the quality of various determinants of health and undertake research in the social and economic dynamics that underlie health inequities at global and local levels, including those of human rights.~~ ~~Moreover, students master the principles of qualitative and quantitative social science research designed to address health policy and equity issues.~~ In pursuing their interests, students have the opportunity to link into existing and ongoing faculty research.	**HEALTH** The Graduate Program in Health is a cross- disciplinary program, providing students with a broad range of perspectives that cross health policy, health equity, health system management and health informatics. MA and PhD students choose from one of two different fields of study: ❖ **Health Policy & Equity** ❖ **Health System Management & Health Data Analytics.** The **Health Policy & Equity field** emphasizes equity in health through policies that are directed at the social, political and economic causes of inequality, unequal access to health as well as inequities resulting from the administration, organization, funding and delivery of health care services. Health equity is explored through a range of theoretical, empirical, interdisciplinary, and experiential orientations, supported by York's thematic strength in social justice. The **Health System Management & Health Data Analytics field** combines two areas of intellectual focus that correspond to specialization within our school – health system management and health informatics. They are combined in a way that centers around on the use of health data analytics to improve health system management decision making, incorporating not only the technical, but also the social, political, economic and organizational aspects of decision making. A range of perspectives are employed towards improving knowledge utilization and knowledge mobilization in the health sector. The program is interdisciplinary, incorporating perspectives from political science, political economy, law, economics, sociology, health services research, organization and management studies, health informatics, history and ethics. There is an intentional intersecting of the two fields by having students take the same foundational courses. Overall, the Program provides a comprehensive curriculum that incorporates the School of Health Policy and Management's interdisciplinary perspectives on health policy and equity, health management and health informatics. In pursuing their interests, students have the opportunity to link into existing and ongoing faculty research.

MASTER OF ARTS PROGRAM

ADMISSION REQUIREMENTS

Students with an honours degree who wish to be considered for admission to the MA in Health must:

- have completed an honours undergraduate degree with a B+ average or equivalent in the last two years of study, in a field related to health policy, health management or health informatics. Related disciplines might include psychology, political science, management, or nursing;
- provide a statement of interest demonstrating commitment to advanced research in the field. The statement should include a discussion of the applicant's background, interests, skills and career goals, along with a proposed field of study and research interests;
- demonstrate ability in writing and research by submitting a recent research paper or report that the applicant has written for a course or in an employment context; and,
- ~~provide three letters of reference, from at least one university faculty member and preferably from two university faculty members~~. Equivalencies (letters from non-university professional colleagues) are considered for applicants who have been out of school for more than five years.

DEGREE REQUIREMENTS

MA Degree by Major Research Paper

Students must successfully complete the following requirements:

1. Courses

Master's students are required to take **six 3.0 credit courses** in the first two terms of study. ~~**Two of these are core courses in the Graduate Program in Health**~~:

~~**Health 5405 3.0: Graduate Research Methods**~~
~~**Health 5485 3.0: Public Policy and Health**~~

MASTER OF ARTS PROGRAM

ADMISSION REQUIREMENTS

Students with an honours degree who wish to be considered for admission to the MA in Health must:

- have completed an honours undergraduate degree with a B+ average or equivalent in the last two years of study, usually in a social science field related to health policy, health management or health informatics. Related disciplines might include psychology, political science, sociology, women's studies, management, or nursing;
- provide a statement of interest demonstrating commitment to advanced research in the field. The statement should include a discussion of the applicant's background, interests, skills and career goals, along with a proposed field of study and research interests;
- demonstrate ability in writing and research by submitting a recent research paper or report that the applicant has written for a course or in an employment context; and,
- provide two letters of reference, both preferably from university faculty members. Equivalencies (letters from non-university professional colleagues) are considered for applicants who have been out of school for more than five years.

DEGREE REQUIREMENTS

MA Degree by Major Research Paper

Students must successfully complete the following requirements:

1. Courses

Master's students are required to take **six 3.0 credit courses** in the first two terms of study. **Three** of these are 'foundational' courses in the Graduate Program in Health including the following foundational graduate research methods course which is required:

Health 5405 3.0: Graduate Research Methods

Students must complete two additional foundational courses from the following (a selection of which will be offered each year):

Health 5010 3.0: Health and Science
Health 5020 3.0: Health and Economics
Health 5030 3.0: Health and Politics
Health 5040 3.0: Health Ethics & Law
Health 6245 3.0: Perspectives on Knowledge Translation and Evidence-based decision making

~~In addition,~~ master's students must complete **two** field-specific courses from the following:

Health 6210 3.0: The Political Economy of Health Inequities
Health 6220 3.0: Human Rights and Health Equity
Health 6230 3.0: Health Equity: Analytic Orientations
~~**Health 6300 3.0: Political Economy of Global Health**~~

Finally, students must complete ~~**two**~~ **elective courses** from the remaining Health course roster, ~~with a maximum of one course from~~ another graduate program upon Graduate Program Director approval. The course requirements outlined are designed to ensure that students benefit from the interdisciplinary nature of the program.

2. Major Research Paper
The major research paper tests students against the educational objectives of being able to form an original researchable question, and to address it through an appropriate theoretical framework, review and synthesis of the literature, analysis of primary or secondary data sources and formation of a set of conclusions. It trains students in the formulation and writing of a specific project, and give them the experience of working independently on a project under faculty supervision. Students develop a research topic given ~~their interests in specific areas~~ and are supervised by faculty members with related expertise.

The major research paper is evaluated by the student's major research paper supervisor and advisor through the written work, and an oral presentation at which the student's ability to answer questions related to the major research paper is assessed. The major research paper is evaluated on the extent to which the student proposes an original researchable question, and their ability to address it through an appropriate theoretical framework, review and synthesis of the literature, analysis of primary or secondary data sources and formation of a set of conclusions. The length of the

Master's students **in the Health Policy & Equity Field** must complete **two field-specific courses** from the following:

Health 6210 3.0: The Political Economy of Health Inequities
Health 6220 3.0: Human Rights and Health Equity
Health 6230 3.0: Health Equity: Analytic Orientations
Health 5485 3.0: Public Policy and Health

Master's students **in the Health System Management and Health Data Analytics Field** must complete **two field-specific courses** from the following:

Health 5050 3.0: Perspectives in Decision Making
Health 5420 3.0: Measurement for Health Improvement
Health 6XX 3.0: Machine Learning for Health
Health 6XX 3.0: Health Data Visualization

Finally, all MA students must complete **one elective course** from the remaining Health course roster, or from another graduate program upon Graduate Program Director approval. The course requirements outlined are designed to ensure that students benefit from the interdisciplinary nature of the program.

2. Major Research Paper
The major research paper tests students against the educational objectives of being able to form an original researchable question, and to address it through an appropriate theoretical framework, review and synthesis of the literature, analysis of primary or secondary data sources and formation of a set of conclusions. It trains students in the formulation and writing of a specific project, and gives them the experience of working independently on a project under faculty supervision. Students develop a research topic given their specific interests and are supervised by faculty members with related expertise.

The major research paper is evaluated by the student's major research paper supervisor and advisor through the written work, and an oral presentation at which the student's ability to answer questions related to the major research paper is assessed. The major research paper is evaluated on the extent to which the student proposes an original researchable question, and their ability to address it through an appropriate theoretical framework, review and synthesis of the literature, analysis of primary or secondary data sources and formation of a set of conclusions. The length of the

major research paper is 50 pages with an upper limit of no more than 65 pages, excluding references.

PROGRAM LENGTH
The expected degree completion time for full-time master's students is 3 terms. For those students who complete degree requirements earlier than 3 terms, they must register and pay fees for a minimum of the equivalent of 3 terms of full- time study. All requirements for a master's degree must be fulfilled within 12 terms (4 years) of registration as a full-time or part-time master's student in accordance with Faculty of Graduate Studies' registration policies.

DOCTOR OF PHILOSOPHY PROGRAM

ADMISSION REQUIREMENTS
Students with a master's degree who wish to be considered for admission to the PhD Program in Health must:

- have completed a master's degree with a B+ average or equivalent in a field of study related to health policy, health management or health informatics Related disciplines might include psychology, ~~life sciences~~, political science, management or nursing
- provide a statement of interest demonstrating commitment to advanced research in the field. The statement should include a discussion of the applicant's background, interests, skills and career goals, ~~along with a proposed field of study and research interests~~;
- demonstrate ability in writing and research by submitting a recent research paper or report that the applicant has written for a course or in an employment context; and,
- ~~provide three letters of reference, from at least one university faculty member and preferably two from university faculty members~~. Equivalencies (letters from non-university professional colleagues) will be considered for applicants who have been out of school for more than five years.

Applicants are assessed based on academic achievement and/or demonstrated capacity or potential for advanced work in an applied area. The statement of interest and submitted research paper or report provide a basis for evaluating that potential.

Candidates with backgrounds in varying disciplines are assessed by the admissions committee on a case-by-case basis. The most important factors remain research excellence and research potential as demonstrated

major research paper is 50 pages with an upper limit of no more than 65 pages, excluding references.

PROGRAM LENGTH
The expected degree completion time for full-time master's students is 3 terms. For those students who complete degree requirements earlier than 3 terms, they must register and pay fees for a minimum of the equivalent of 3 terms of full- time study. All requirements for a master's degree must be fulfilled within 12 terms (4 years) of registration as a full-time or part-time master's student in accordance with Faculty of Graduate Studies' registration policies.

DOCTOR OF PHILOSOPHY PROGRAM

ADMISSION REQUIREMENTS
Students with a master's degree who wish to be considered for admission to the PhD Program in Health must:

- have completed a master's degree with a B+ average or equivalent in a field of study related to health policy, health management or health informatics Related disciplines might include psychology, sociology, women's studies, political science, management or nursing
- provide a statement of interest demonstrating commitment to advanced research in the field. The statement should include a discussion of the applicant's background, interests, skills and career goals, and research interests along with selection of one of the fields of study;
- demonstrate ability in writing and research by submitting a recent research paper or report that the applicant has written for a course or in an employment context; and,
- provide two letters of reference, both preferably from university faculty members. Equivalencies (letters from non-university professional colleagues) will be considered for applicants who have been out of school for more than five years.

Applicants are assessed based on academic achievement and/or demonstrated capacity or potential for advanced work in an applied area. The statement of interest and submitted research paper or report provide a basis for evaluating that potential.

Candidates with backgrounds in varying disciplines are assessed by the admissions committee on a case-by-case basis. The most important factors remain research

through competitive grade standing, favourable reference letters and publications.

DEGREE REQUIREMENTS
Candidates for the PhD degree must successfully complete the following requirements:

1. Courses
PhD students in Health entering with a master's degree are required to take **seven 3.0 credit courses** in the first 1-2 years of study (as specified below).

Students entering with ~~a master's degree in Health Policy & Equity~~ from York's Graduate Program in Health must take **four 3.0 graduate courses** or equivalent within the first year of study (upon discussion with the supervisor and Graduate Program Director, with at least **two 3.0 courses** from the Graduate Program in Health).

'Non-standard' ~~applicants~~, *i.e.*, with qualifications other than a master's degree, ~~may be considered. These students~~ must take **ten 3.0 credit courses** within the first two years of study (as specified below).

Generally, students entering with a master's degree are required to take the following courses:

~~**Two core courses:**~~
~~**Health 5485 3.0: Public Policy and Health**~~
~~**Health 5405 3.0: Graduate Research Methods** (can be replaced by an equivalent number of credits upon supervisor and Graduate Program Director approval, if the student has taken an equivalent graduate course in research methods)~~

Two field-specific courses from the following:
Health 6210 3.0: Political Economy of Health Inequities
Health 6220 3.0: Human Rights and Health Equity
Health 6230 3.0: Health Equity: Analytic Orientations
Health 6300 3.0: Political Economy of Global Health

excellence and research potential as demonstrated through competitive grade standing, favourable reference letters and publications.

DEGREE REQUIREMENTS
Candidates for the PhD degree must successfully complete the following requirements:

1. Courses
PhD students in Health entering with a master's degree are required to take **seven* 3.0 credit courses** in the first 1-2 years of study (as specified below).

PhD Students entering with an MA from York's Graduate Program in Health must take **four 3.0 graduate courses** or equivalent within the first year of study (upon discussion with the supervisor and Graduate Program Director, with at least **two 3.0 courses** from the Graduate Program in Health).

'Non-standard' entrants to the PhD program, *i.e.*, with qualifications other than a master's degree, must take **ten 3.0 credit courses** within the first two years of study (as specified below).

Generally, students entering with a master's degree are required to take the following courses:

Two foundational courses from the following:
Health 5010 3.0: Health and Science
Health 5020 3.0: Health and Economics
Health 5030 3.0: Health and Politics
Health 5040 3.0: Health Ethics & Law
Health 6245 3.0: Perspectives on Knowledge Translation and Evidence-based decision making

* PhD students who have not previously completed an equivalent graduate level methodology course must take **Health 5405 3.0: Graduate Research Methods,** in addition to the 2 foundational courses for a total of 3 foundational courses.

Students **in the Health Policy & Equity Field** must complete **two field-specific courses** from the following:

Health 6210 3.0: Political Economy of Health Inequities
Health 6220 3.0: Human Rights and Health Equity
Health 6230 3.0: Health Equity: Analytic Orientations
Health 6300 3.0: Political Economy of Global Health
Health 5485 3.0: Public Policy and Health

Students **in the Health System Management and Health Data Analytics Field** must complete **two**

	field-specific courses from the following: **Health 5050 3.0: Perspectives in Decision Making** **Health 5420 3.0: Measurement for Health Improvement** **Health 6XX 3.0: Machine Learning for Health** **Health 6XX 3.0: Health Data Visualization**
Finally, all students must complete the credit requirements corresponding to their admission category drawing from courses from the Health roster, with ~~a maximum of **one 3.0 credit course** from another graduate program (or **two 3.0 credit courses**, for students with a master's degree in Health Policy and Equity from York) upon Graduate Program Director approval.~~	Finally, all students must complete the credit requirements corresponding to their admission category drawing from courses from the Health roster, with up to **two 3.0 credit elective courses** from another graduate program, upon Graduate Program Director approval. Students in the Health System Management &Health Data Analytics field without a graduate level statistics course must take one as an elective.
The course requirements outlined are designed to ensure that students benefit from the interdisciplinary nature of the specialization.	The course requirements outlined are designed to ensure that students benefit from the interdisciplinary nature of the specialization.
2. Comprehensive Examinations The comprehensive examination consists of two written papers (about 25 double-spaced pages each, excluding references) and an oral examination.	**2. Comprehensive Examinations** The comprehensive examination consists of two written papers (about 25 double-spaced pages each, excluding references) and an oral examination.
Each paper must be comprised of a concise literature review and demonstrate command of the literature.	Each paper must be comprised of a concise literature review and demonstrate command of the literature.
The first paper addresses theoretical tensions and debates in health policy and equity. The second paper addresses a dissertation specific area of study and includes an overview of methods (additional 5 to 10 double-spaced pages) under consideration for the dissertation.	The first paper addresses theoretical tensions / debates in the field of study (e.g. health policy and equity or health systems management and data analytics). The second paper addresses a dissertation specific area of study and includes an overview of methods (additional 5-10 double-spaced pages) that the student is considering for the dissertation.
Generally, the two papers are completed over **8 months** under the supervision of two faculty members of the Graduate Program in Health. Affiliated faculty members may supervise one paper upon Graduate Program Director approval. The supervisor of the first paper will be the advisor of the second paper. Conversely, the supervisor of the second paper will be the advisor of the first paper. In all cases, students should have an assigned dissertation supervisor no later than their fifth term of study. The Graduate Program Director ~~will~~ assist in students finding and confirming a supervisor.	Generally, the two papers are completed over **8 months** under the supervision of two faculty members of the Graduate Program in Health. Affiliated faculty members may supervise one paper upon Graduate Program Director approval. The supervisor of the first paper will be the advisor of the second paper. Conversely, the supervisor of the second paper will be the advisor of the first paper. In all cases, students should have selected a dissertation supervisor no later than their fifth term of study. The Graduate Program Director may assist students who need help in finding and confirming a supervisor.
For students entering with a master's degree, the comprehensive examination will normally take place	For students entering with a master's degree, the comprehensive examination will normally take place

in the second term of the second year (fifth term in the program). For students entering with a master's degree in Health from the Graduate Program in Health from York, the comprehensive examination will normally take place in the first term of the second year (fourth term in the program). For nonstandard entrants, the comprehensive examination will normally take place during the 3rd term of the 2nd year (6th term in the program). Under exceptional circumstances the comprehensive examination will take place later. A maximum of two substantive revisions are allowed for each paper in advance of the oral examination.	in the second term of the second year (fifth term in the program). For students entering with a master's degree in Health from the Graduate Program in Health from York, the comprehensive examination will normally take place in the first term of the second year (fourth term in the program). For nonstandard entrants, the comprehensive examination will normally take place during the 3rd term of the 2nd year (6th term in the program). Under exceptional circumstances the comprehensive examination will take place later. A maximum of two substantive revisions are allowed for each paper in advance of the oral examination.
During the oral examination, students must demonstrate a comprehensive knowledge of scholarly theoretical and empirical work in the areas that were the foci of the written papers. Students will pass, pass with revisions or not pass. Students who do not pass will be permitted to retake the examination once. The reexamination will take place within three months of the date of the first examination. A second failure will result in withdrawal of the student from the program.	During the oral examination, students must demonstrate a comprehensive knowledge of scholarly theoretical and empirical work in the areas that were the foci of the written papers. Students will pass, pass with revisions or not pass. Students who do not pass will be permitted to retake the examination once. The re-examination will take place within three months of the date of the first examination. A second failure will result in withdrawal of the student from the program.
3. Dissertation After successful completion of the comprehensive examination students will focus on the dissertation process. The dissertation must make an original contribution to scholarship in the student's specified topic. The dissertation process includes:	**3. Dissertation** After successful completion of the comprehensive examination students will focus on the dissertation process. The dissertation must make an original contribution to scholarship in the student's specified topic. The dissertation process includes:
❖ The establishment of a supervisory committee. This committee will be comprised of three faculty members (generally, albeit not necessarily, members of the comprehensive examination committee), at least two of whom must be members of the Graduate Program in Health. The supervisor must be a full-time faculty member from the Graduate Program in Health. The third member may be appointed to a graduate program other than Health. In all cases a supervisory committee should be established no later than the seventh term in the program. The Graduate Program Director will assist in students forming a supervisory committee.	❖ The establishment of a supervisory committee. This committee will be comprised of three faculty members (generally, albeit not necessarily, members of the comprehensive examination committee), at least two of whom must be members of the Graduate Program in Health. The supervisor must be a full-time faculty member from the Graduate Program in Health. The third member may be appointed to a graduate program other than Health. In all cases a supervisory committee should be established no later than the 7th term in the program. The GPD will assist students who require help with forming a supervisory committee.
❖ The preparation of a dissertation proposal. A dissertation proposal should normally be completed within one term following the comprehensive examination. ~~Students will be expected to present their proposal at the Graduate Colloquium in Health or similar forum intended as sites to exchange ideas and present research.~~ The proposal must be approved by	❖ The preparation of a dissertation proposal. A dissertation proposal should normally be completed within one term following the comprehensive examination. The proposal must be approved by the supervisory committee and all ethics approvals must be completed and approved prior to the initiation of the

the supervisory committee, ~~the Graduate Program Director, and the Faculty of Graduate Studies~~ prior to the initiation of the research project. ❖ The conduct and write up of an original research project~~. This~~ will include conducting the proposed doctoral research and writing up its rationale, methodology, findings and ~~policy and equity~~ implications in a dissertation format acceptable to the supervisory committee and formally approved as examinable by the members of that committee. ❖ The oral defence. The oral defence consists of the successful completion of an oral examination addressing the dissertation research and related matters and presided over by an examining committee ~~recommended by the Graduate Program Director for approval and appointment by the Faculty of Graduate Studies~~. PROGRAM LENGTH The length of time required to complete the PhD is normally four years (12 terms). ~~Doctor of Philosophy~~ students must register and pay fees for a minimum of the equivalent of six terms of full-time registration. All requirements for a doctoral degree must be fulfilled within 18 terms (6 years) of registration as a full-time or part-time doctoral student in accordance with Faculty of Graduate Studies' registration policies.	research project. ❖ The conduct and write up of an original research project will include conducting the proposed doctoral research and writing up its rationale, methodology, findings and implications in a dissertation format (traditional or manuscript-based) acceptable to the supervisory committee and formally approved as examinable by the members of that committee. ❖ The oral defence. The oral defence consists of the successful completion of an oral examination addressing the dissertation research and related matters and presided over by an examining committee. PROGRAM LENGTH The length of time required to complete the PhD is normally four years (12 terms). PhD students must register and pay fees for a minimum of the equivalent of six terms of full-time registration. All requirements for a doctoral degree must be fulfilled within 18 terms (6 years) of registration as a full-time or part-time doctoral student in accordance with Faculty of Graduate Studies' registration policies.

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March 12, 2021

Professor Liane Ginsburg,
Interim Chair
School of Health Policy & Management

Dear colleagues,

I am pleased to support the proposal by the School of Health Policy and Management to develop a new field in their Masters of Health degree dedicated to health system management and health data analytics. It is specifically designed to appeal to those who wish to develop advanced research skills and undertake a thesis.

As noted in the Notice of Intent, the original approved proposal creating the Master of Health degree was developed with the intention of creating inter-related fields. A field in Health Policy and Equity was created and approved at the onset of the degree. The current stream appeals to individuals with interests in health policy and the use of policy as an instrument to improve health equity. Over the last 15 years, there has been an increased need to improve management practices, not only within individual healthcare provider agencies, but particularly to improve the integration and management of what is generically regarded as the "healthcare system". A growing body of evidence now indicates that the collection of health providers and agencies thought to be part of this "system" are poorly integrated and connected. The "system" is also fundamentally ill-equipped to prevent or manage chronic conditions (e.g., heart disease, stroke, COPD including asthma, various mental health conditions, dementia, diabetes, musculoskeletal and motor control diseases) which are the greatest causes of death and disability in Canada and around the world, and the most costly to deal with. The "system" was not designed to address the broader determinants of health, morbidity, or mortality. This is problematic because research indicates less than 25% of health or illness are determined by the provision of healthcare. The recent development of advanced analytic techniques and the emergence of "systems theory" within the health sector are examples of important tools that future health system managers and researchers must be aware of and able to use.

The proposal to create a new field in Health System Management and Health Data Analytics is designed to meet an unmet demand for researchers and professionals with advanced knowledge and skills to improve the management, effectiveness, integration, and efficiency of healthcare systems. Previous structures such as regional health authorities and local health integration networks have had only modest impact because they have difficulty hiring individuals with the advanced perspectives and tools required to create and sustain systemic change. Managers within individual agencies have difficulty understanding how their organization should contribute to a larger system. The COVID pandemic and the vaccination rollout provide illustrations of these shortcomings. It also provides an illustration of why we require more researchers with specific experience in an understanding of the highly complex factors specific to health, illness, and the organization and implementation of the current healthcare system. Generic skills in management or analytics are not sufficient, particularly given that failure can quickly result in thousands of deaths, hundreds of thousands of disability life years, and billions of wasted tax dollars. Likewise, current common research models and methods employed in academia, think tanks, and health agencies involved in research have not kept pace with these innovations which, in turn, inhibits our ability to fully understand the complex interaction of factors, conditions and elements necessary to improve health outcomes, system integration, and overall management.

Adding the current stream will assist the School of Health Policy and Management, and its graduate programs to more fully achieve their original vision and purpose. Adding the proposed field is consistent with the UAP priorities to enhance 21st Century learning, generate and apply knowledge for the future, and contribute directly to the UN SDG for good health and wellbeing. The new field will contribute to the Faculty of Health's mission to enhance human health, health equity, health care and wellbeing through world leading research, education, and strategic partnerships for the public good. Enhancing graduate programming in health system management, analytics and informatics is part of our current IRP.

The addition of a new field in health system management and data analytics will not require any additional resources. The School of Health Policy and Management was designed specifically for the purpose of improving the management of health and healthcare services. To that end, the School already has a number of highly regarded faculty members with expertise in health management and data analytics. Indeed, creation of a new field will improve our ability to recruit more students and equitably distribute graduate supervision and teaching within the School. The majority of current applicants to the program are attracted by the ability to concentrate their work in health policy and equity. Few applicants or perspective applicants are aware that current course offerings and faculty expertise are already available to provide students with skills in health management and data analytics. Conversely, our initial market analysis indicates there is a significant unmet demand for such expertise. The net effect is that the current masters program is under-subscribed relative to its potential and capacity. The creation of this new field will help highlight our existing expertise and strengths.

In short, I enthusiastically support the proposal to create a new field, with a thesis requirement, in Health System Management and Health Data Analytics aimed at enhancing human resource and agency capacity in research and evidence-generated practice.

Sincerely,

Paul McDonald, PhD, FRSPH, FCAHS
Professor and Dean

January 29th, 2021

FACULTY OF LIBERAL ARTS AND PROFESSIONAL STUDIES

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New Field in Health Management and Health Data Analytics – Consultation Letter

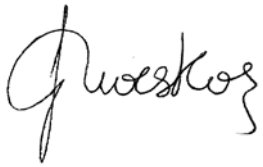
The School of Information Technology had a constructive and informative consultation meeting with the proponents of the *Graduate Field in Health Management and Health Data Analytics* within the Graduate Program in Health. Liane Ginsburg, Chair of the School of Health Policy & Management, and Serban Dinca Panaitescu, Associate Professor of Health Informatics presented the idea, context, rationale of the proposed field and offered us a sketch of its curricular structure.

Our graduate program, the Master of Arts in Information Systems & Technology (MAIST) is a research-based degree with a thesis option and a focus on technical, business/organizational and application aspects of Information Technology, including Data Analytics and Machine Learning. The proposed new field in the Graduate Program in Health will focus on the intersection between health data analytics and health system decision making (e.g. decisions by health care leaders, managers, and policy makers). Given the focus of the proposed program on the health domain and its strong application orientation, rather than technical orientation that MAIST takes, we see the proposed program not only as complimentary but also as a great opportunity for collaboration and mutual support in various forms.
For example:

- Our graduate students are allowed to take up to two courses from outside of our School and the courses in the proposed field provide some good options, especially for students who wish to do thesis work in the health domain. Likewise, students in the new Health Management and Health Data Analytics field who want to deepen their understanding of technical aspects of data analytics can also take one or two of their elective courses from within MAIST. Examples of such courses are *Data Visualization*, *Machine Learning*, *Advanced Web Mining*, *Advanced Information Retrieval Systems*. MAIST also has a course *Health Information Systems* that may be of interest to students of the proposed field or the program in general. These opportunities to host each other's students would service both programs, increase the interdisciplinarity of both programs, and expand the breadth of course options available to students.
- As several MAIST professors have research projects within the Health domain, there is strong potential for sharing faculty expertise on advisory / supervisory committees of graduate students in one another's graduate programs.
- When available, reciprocal teaching could be arranged between our programs.

Overall, the School of Information Technology is in support of the proposed stream and is enthusiastic with the possibilities it opens for collaboration.

Sincerely Yours,



Sotirios Liaskos
Associate Professor, Director
School of Information Technology
York University
Email: liaskos@yorku.ca
Tel: 416-736-2100 (x33862)

Subject: Masters in Health Management & Health Data Analytics
Date: Monday, February 1, 2021 at 11:42:39 AM Eastern Standard Time
From: Amin Mawani
To: Liane R Ginsburg
CC: Joseph Mapa

Dear Liane,

Joe and I support your new proposed degree program (Masters in Health **Management** & Health Data Analytics) and believe it is sufficiently different from our proposed new degree program.

However, we do wish to register a concern about your use of the term "management" in your degree name since many prospective students may confuse it as being a degree from Schulich.

Currently, Schulich offers eight different Master's degree programs with the term "Management" in their titles, and we are concerned that your offering of a Master's degree in **Management** will confuse our students.

Your description of Faculty of Health's proposed Master in Health Management & Health Data Analytics seems to indicate that we likely have a different focus, different target markets and different pedagogical approaches.

Subject to the concern about the similar names of our degree programs, we whole-heartedly welcome the cooperative interchange of faculty expertise, cross-listing of courses and the ability of students from both faculties to take a limited number of courses from the other faculty. We share common objectives of broadening students' experiences and increasing the interdisciplinarity of both programs. There is no point in reinventing the wheel if it has already been well-developed by another York faculty. Therefore, please be assured that we will mutually cooperate with your faculty colleagues and your students to ensure that both Faculties have solid and sustainable degree programs for the benefit of all our respective students and faculty colleagues.

Regards,

Joseph Mapa and Amin Mawani

LASSONDE SCHOOL OF ENGINEERING | YORK UNIVERSITÉ UNIVERSITY

January 22, 2021

Liane Ginsburg
Professor & Interim Chair
School of Health Policy & Management
Faculty of Health

RE: Support Statement for the proposed new field in Health Management and Health Data Analytics in the Graduate Program in Health

Dear Liane:

Thank you for connecting with me to discuss possible synergies and potential overlap between your Graduate Program in Health proposal for a new field in Health Management and Health Data Analytics and programs/initiatives I am involved with. Based on our conversation, I am happy to provide this letter of support for your proposal.

Overall, I see several complementarities as well as possible opportunities for collaboration. In terms of potential overlap with existing graduate programs offered through Lassonde, the MSc in Computer Science with a Specialization in AI is a professional Master's degree with a technical focus on AI across a variety of sectors. Based on our conversation, I understand our Program to be quite different from the proposed new field in the Graduate Program in Health, which will focus on the health system and, in particular, the intersection between health data analytics and health system decision making. Given these differences, the programs may be complimentary, but significant duplication is highly unlikely.

More relevant may be our discussion of my work co-chairing the cross-faculty Task Force on AI & Society. The Task Force defines AI broadly and considers both the technical side of AI and also the social, ethical, legal sides of AI. While the Task Force report has yet to be released, it sounds like there may be synergistic opportunities between some of the task force recommendations and your initiative in the health sector. I am thinking particularly that undergraduate degree programs in AI recommended by the Task Force may serve as pathways to your program. Also, there may be the possibility of creating joint micro-credential and certificate programs, such as a graduate certificate in AI for Health.

JAMES H. ELDER • CENTRE FOR VISION RESEARCH • YORK UNIVERSITY
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I look forward to continuing conversations about how Lassonde and the Task Force work on AI may align with new graduate student opportunities in Health Data Analytics spearheaded by the School of Health Policy & Management.

Best of luck with the proposal.

Sincerely,

James Elder
Professor & York Research Chair in Human and Computer Vision
Co-Chair, York Task Force on AI & Society
Department of Electrical Engineering and Computer Science,
Department of Psychology &
Centre for Vision Research
York University

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10 February 2021

I met with Liane Ginsburg, Interm Chair, School of Health Policy & Management regarding the new field they are proposing in Health Management and Health Data Analytics in their Graduate Program in Health.

The conversation provided a valuable consultation and I am supportive of the new Field they are proposing to add to their Graduate Program.

In our conversation, we identified several opportunities for future collaboration:

Mathematics and Statistics is proposing a new undergraduate Major in Data Science. Many Data Science graduates will apply their knowledge through graduate work in fields other than Statistics where Data Science is applied. So this new graduate program in Health will be of great interest to those of our Data Science graduates who are interested in Health.

We also discussed opportunities for members of our departments to serve on each other's Masters and Doctoral committees from time to time – we often have students working on problems in the health sector and SHPM graduate students could benefit from the unique expertise we have on campus in areas such as Big Data.

While not related to their proposed new Graduate Program in Health, we also discussed other collaborative opportunities between our undergraduate programs – perhaps co-developing a course on data science in health or creating opportunities for minors in one another's programs. Initiatives such as these would benefit students in both programs who have a secondary interest in the other program.

We look forward to ongoing collaboration!

Stephen Watson

Professor Stephen Watson (he/him)
Chair
Department of Mathematics and Statistics
York University

Friday, March 26, 2021 at 18:19:06 Eastern Daylight Time

Subject: Confirming Space in KINE 6010 for HM PhD students
Date: Friday, March 26, 2021 at 11:45:57 AM Eastern Daylight Time
From: Chris I Ardern
To: Liane R Ginsburg
CC: Angelo Belcastro, Michael Rotondi, Stephanie Marston

Dear Liane,

Thank you for inquiring about whether it would be possible to secure one to two seats for doctoral students in your new proposed field (and health system management and health data analytics) in our introductory statistics course (KINE 6010 – Univariate Statistics). I have consulted with the course instructor and we both agree that our program should be able to accommodate this request. The content and applied components of the course (labs, examples, etc.) will, however, continue as currently taught as geared towards KINE students. If you let us know when the new field has been approved, we can inform the RO to hold the seats for your students.

Regards,
Chris

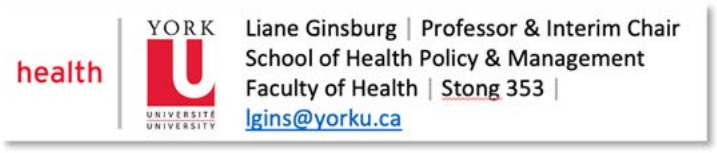
Chris Ardern
Graduate Program Director (Acting)
School of Kinesiology and Health Science
York University, Toronto, ON
cardern@yorku.ca

Subject: RE: Graduate statistics course
Date: Thursday, March 18, 2021 at 12:51:04 PM Eastern Daylight Time
From: David B. Flora
To: Liane R Ginsburg, Suzanne E MacDonald
Attachments: image001.png, image002.png

Hi Liane,
Yes I think that's feasible.
Cheers
Dave

From: Liane R Ginsburg <lgins@yorku.ca>
Sent: March 18, 2021 11:50 AM
To: David B. Flora <dflora@yorku.ca>; Suzanne E MacDonald <suzmac@yorku.ca>
Subject: Re: Graduate statistics course

Thanks for this David.
Sounds like 6131 would be really useful for our doctoral students (and interested MA students)
Do you think it would feasible to get a seat for 1 student (or maybe 2) in this course most years?



From: "David B. Flora" <dflora@yorku.ca>
Date: Tuesday, March 16, 2021 at 9:41 AM
To: Suzanne E MacDonald <suzmac@yorku.ca>, Liane Ginsburg <lgins@yorku.ca>
Subject: RE: Graduate statistics course

Hi Liane,
We teach a broad range of statistics courses to grad students in psychology, but of course they focus on the methods that are most commonly used in psychological research and all of the examples, exercises, etc are based on psychology applications. That being said, of course the basic principles of applied statistics generalize across fields, although my guess is that certain topics like data mining and machine learning that we do not teach in psych may be more relevant to your program.
Anyway, a list of our quantitative methods courses is here:
https://qm.info.yorku.ca/program/courses/
6131 and 6132 are required of all MA students in psychology, and so those are taught every year. They do tend to be full, but it might be possible to include a couple of your students. Only a small subset of the other courses are taught each year, but there's always something.
I hope that helps!
Dave Flora

From: Suzanne E MacDonald <suzmac@yorku.ca>

Sent: March 15, 2021 6:05 PM
To: Liane R Ginsburg <lgins@yorku.ca>; David B. Flora <dflora@yorku.ca>
Subject: Fwd: Graduate statistics course

Hi Liane,
I'm not sure exactly what content you are looking for, so I have copied our Quantitative Methods area coordinator, David Flora, on this email. Dave will be able to tell you which of our courses might be appropriate for your students (thanks, Dave!).

Hope we will be able to help! All the best,

Suzanne

Dr. Suzanne MacDonald (she/her)
University Professor and Graduate Program Director
Department of Psychology
York University
4700 Keele Street
Toronto, ON M3J 1P3
Phone: 416.736.2100 x33970 or x66226
Email: suzmac@yorku.ca
Twitter: @YorkPsyc
Website: suzannemacdonald@mac.com

Chair, Royal Canadian Institute for Science (RCIScience.ca)

From: Liane R Ginsburg <lgins@yorku.ca>
Sent: March 15, 2021 4:02 PM
To: Jennifer A Connolly <connolly@yorku.ca>; Angelo Belcastro <anbelcas@yorku.ca>
Subject: Graduate statistics course

Dear Jennifer and Angelo,
We are 95% of the way towards submitting a proposal for our new field in "Health System Management and Health Data Analytics" in our Graduate Program in Health.
We will have 1-2 doctoral students a year who may need to take a graduate level applied statistics course. I am guessing you have one or more stats offerings for your grad students and am wondering how I would explore whether one might be right for us and, if so, how easy or difficult it would be to secure 1-2 seats a year in such a course.
Thanks for any suggestions or advice you can provide.
Thanks
Liane

health | YORK UNIVERSITÉ UNIVERSITY
Liane Ginsburg | Professor & Interim Chair
School of Health Policy & Management
Faculty of Health | Stong 353 |
lgins@yorku.ca

30 Bond Street
250Y, 6th floor, room 648
Toronto, ON M5B 1W8
416-864-6060 x 77548
info@choosingwiselycanada.org
ChoosingWiselyCanada.org

Dr. Liane Ginsburg
School of Health Policy & Management
York University
Toronto, Canada

February 16, 2021

Dear Dr. Ginsburg,

Re: Graduate Program in Health – New field in Health Management and Health Data Analytics

It is with much enthusiasm that I write this letter in support of the new field within the Graduate Program in Health in the area of Health Management and Health Data Analytics.

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. Since 2014, Choosing Wisely Canada has worked to bridge the sizeable chasm between scientific knowledge and everyday action that drives overuse. This includes our work with professional societies to call out over 400 specific practices that should be stopped, and with provider organizations and policymakers to re-engineer systems that tend to make overuse the default.

A big part of this shift in behaviour has to be driven by data. For instance, supplying organizations and individual clinicians with analytics showing their practice patterns compared to peers has been shown in the international literature to be effective in reducing overuse. However, such innovative uses of data in decision-making have been hampered by the lack of skilled practitioners and researchers able to combine data science with behavioural and implementation science to compel desired action.

Your proposal is timely and exciting to me because of its inter-disciplinary emphasis as well as its potential bridge the chasm between data and action. I offer this proposal my strongest support.

Yours Sincerely,

Tai Huynh, MDes, MBA
Campaign Director and Co-founder
Choosing Wisely Canada

UNIVERSITY
OF
TORONTO

Howard B. Abrams, MD, FRCPC
Associate Professor of Medicine
Division of General Internal Medicine

Director

OPENLAB
Proud Member UHN

February 18, 2021

Graduate Program in Health

RE: Proposed New Field in Health Management and Health Data Analytics

As the former Division Head of General Internal Medicine, and one of the founding Directors of OpenLab at the University Health Network (UHN), it is my pleasure to write a letter of support for the Graduate Program in Health – New Field in Health Management and Data Analytics.

University Health Network is the largest academic research hospital in Canada, and rated among the top 5 hospitals in the world. Openlab is an interprofessional design and innovation group based at UHN that looks for creative solutions to important health system issues.

Health care is one of the most complex systems; it requires interprofessional collaboration to both manage and adapt to a rapidly changing environment. Acquiring accurate data and the ability to interpret it are the essential basics for evidence-based decision making.

However, understanding complex adaptive systems, organizational behaviour, and implementation science are among the other essential steps in navigating the health care space. Knowledge from organizational psychology where internal culture is impacted by professional, social and political pressures are other key elements that effect the performance of health care systems.

OpenLab not only provides solutions, but is a fertile training ground for students entering this exciting and challenging area of interprofessional study. At OpenLab, we have taken health system issues starting from idea generation, data acquisition and analysis, and moving through user experience, prototyping, story-telling, and implementation.

TORONTO GENERAL HOSPITAL, 200 ELIZABETH ST, EN 14-218, TORONTO, ONTARIO, M5G 2C4
TEL: (416) 340-4195 FAX: (416) 595-5826 E-MAIL: Howard.Abrams@uhn.on.ca

One example of this would be our PODS project (Patient Oriented Discharge Summary), now used across Ontario. It began with the problem of poor adherence to hospital discharge instructions based. Using ethnographic, data analytic, and design methods, we created a simple set of discharge instructions based on what patients told us they want to know at discharge rather than what doctors think they should know. Understanding organizational dynamics and implementation science, we developed a "community of practice" to spread this across Ontario.

Another example would be our NORC project (Naturally Occurring Retirement Community). This began with the recognition that most seniors would rather "age-in-place" rather than go to a Long Term Care Institution. There has been especially relevant during the current COVID pandemic. Using data from the City of Toronto, we mapped out areas of the GTA with high concentrations of seniors, where community development for mutual support and services could be most efficiently located. Using design methods we have developed integrated systems for mutual self-support, connected care, and social activation which are currently in the process of being implemented. Working across the sectors of private citizens, government funded services, real estate companies, and health care and home care institutions has required a deep knowledge of organizational behaviour and implementation science.

In both these examples, data analytics identified needs and opportunities. Using our other skill sets in design, organizational behaviour, and implementation science, we have been able to work creatively in the health care space while engaging with more traditional health care institutions.

UHN and OpenLab have worked with faculty members and students in the School of Health Policy & Management over the last few years on several different projects, e.g. Lifeguard, an mHealth app for creating a supportive self-care network for patients with multiple co-morbidities. In addition, as a post-doc with OpenLab, and now as Assistant Professor at York University, Dr. Appel has created a series of funded investigations studying the uses of VR (Virtual Reality) in people with cognitive impairment.

The proposed program in Health Management and Health Data Analytics is an important and innovative step in creating graduates with the type of "trans-professional" skill sets and collaborative mindsets essential for managing modern, complex health systems. We look forward to continuing to provide opportunities for collaboration, including for new graduate student research projects.

Sincerely,

Howard Abrams MD FRCPC
Director, OpenLab
Division of General Internal Medicine, University Health Network
Associate Professor, Department of Medicine, University of Toronto

Alliance for Healthier Communities
Alliance pour des communautés en santé

500-970 Lawrence Ave. W.
Toronto, ON M6A 3B6
416-236-2539
www.AllianceON.org

York University
School of Health Policy and Management

February, 16, 2021

Dear Review Committee;

Re: Graduate Program in Health – New field in Health Management and Health Data Analytics

We are writing to provide our support for a new field within the School of Health Policy and Management at York University. The Alliance is a leading voice for the promotion of non-profit, community-governed, inter-professional primary health care and includes 107 community-governed primary health care organizations. These organizations are committed to health equity and supporting those facing higher social and medical complexities to good health. Alliance members are also committed to openly sharing information, tools and resources to ensure the highest quality care. All of this requires a strong understanding of data, improvement and analytics to inform decision making, consistently improve care and ensure evidence based service delivery. We exist to improve the health and wellbeing of people and communities facing barriers and feel that the training being proposed in this new field would prepare our leaders.

Within our network, we have recently endorsed a learning health system framework. Our leaders understood the importance of this pivot and believe it will have significant impact on our own work within our walls but also the health system integration work we are all involved with. In a rapidly changing health landscape, we rely on our executive leaders to understand and make decisions using data and analytics and have an understanding of implementation science to do so Our health organizations would benefit from graduates from the proposed program because they would be equipped to maximize health analytics to support decision making and understand the power of implementation science. They would have the tools and knowledge that includes organizational behaviour, psychology combined with informatics, information management and decision science which is ideal in our environment and that we see are necessary skills for health care leaders.

Sincerely,

Jennifer Rayner, PhD
Director, Research and Evaluation
Alliance for Healthier Communities

Mid-West Toronto Ontario Health Team

750 Dundas Street W, Suite 312, Toronto, ON M6J 3S3
Tel: (416) 603-5800 x 4015

Pauline Pariser MASc MD CCFP FCFP LM
Co-Chair, Mid-West Toronto Ontario Health Team
Associate Medical Director, Primary Care Lead, UHN
Associate Professor, Department of Family and Community Medicine, University of Toronto.

Feb 19, 2021

Dr. Liane Ginsburg
School of Health Policy and Management
York University
Toronto, Canada

RE: Health Management and Health Data Analytics Field (Graduate Program in Health)

I am pleased to write a letter of support for the Graduate Program in Health – New Field in Health Management and Data Analytics at York University.

To tell you a little about myself, I have practiced family medicine for over 35 years and am the founder of the Taddle Creek Family Health Team, that was recognized as Family Practice of the Year for Ontario in 2011, by the Ontario College of Family Physicians. In 2012, I was appointed Associate Medical Director at University Health Network and Primary Care Lead for SCOPE (Seamless Care Optimizing the Patient Experience), an initiative in support of solo family physicians gaining better access and integration with community and hospital services. I have held numerous leadership positions at the regional level, most recently appointed Co-chair of the Mid-West Toronto Ontario Health Team (OHT) for downtown Toronto.

In these two current roles, Primary Care Lead for SCOPE and Co-Chair for the Mid-West OHT, I cannot overemphasize the crucial role of data to guide program focus, aid in clinical decision-making and help iterate program improvements to guide effective implementation and sustainability. It has been challenging to recruit health sector human resources who can combine data analytics with health management design. The proposed Graduate Program in Health has finally recognized that it is the

interface of infomatics and organizational decision-making that is so sorely needed as we transition to virtual technology and innovative methods of patient and provider co-design to construct equitable and accessible health delivery systems. Developing this skill set with an interdisciplinary focus recognizes the current gaps that have separated information technology from implementation science.

I look forward to watching this program mature and to potentially finding positions within the organizations I steward for these leading edge practitioners.

Sincerely,

Pauline Pariser

Pauline Pariser MAsc MD CCFP FCFP LM

NORTH YORK GENERAL

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4001 Leslie Street
Toronto, ON M2K 1E1
T 416.756.6000
nygh.on.ca

February 14, 2021

Dr. Liane Ginsburg & Dr. Leeat Granek
School of Health Policy & Management
Faculty of Health, Stong 353
York University
Toronto, ON

Dear Drs. Ginsburg and Granek,

Please allow this letter to serve as a statement of support for your department for the development of a new graduate program in Health Management and Health Data Analytics.

To a medical clinician leader, academic and administrator like me, the importance of having colleagues solidly grounded in the science of healthcare decision making for the development of policy and guidance for the critical decisions we make every day cannot be overstated.

Over my career, I have served as a comprehensive family physician, palliative care physician, clinical and academic lead in my field as well as having administrative responsibilities both at the hospital and community level, regional and provincial level in cancer care and palliative care, and provincial and national leadership (president) positions with our national educational College (College of Family Physicians of Canada) and most recently the Canadian Medical Association (CMA), where I have served as president and am currently immediate past-president. For example, the CMA is the Canadian medical profession's most consulted organization in Canada with regard to health policy in all areas from medical assistance in dying to Pharmacare to tobacco policies to gun control and universal health care. I have personally witnessed and experienced the sophisticated contribution of an interprofessional team of lawyers, ethicists, data analytic experts, economists, researchers, psychologists, physicians and other healthcare providers, with solid backgrounds in health management and policy development, who have provided the scientific and evidence base foundations for health clinicians and decision makers like me to have the robust discussion leading to optimal policy development for our institutions and organizations. I can unequivocally state that without this contribution, our ability to develop necessary and effective policies in so many areas would be sorely lacking.

From a medical teaching and academic point of view, the importance of understanding patient healthcare decision making is crucial to the effective, respectful, ethical, and legal management of patient care. As an Associate Professor at the University of Toronto Medical program in my field of palliative care, I regularly teach about healthcare decision making especially as our patients and families must confront crucial end of life decisions about their care. Another current example during the COVID-19 pandemic is critical care triage if our hospitals and ICUs become overwhelmed and are unable to care for all patients who require that care. This is real for me as Chair and Medical Director of a large hospital and community-based palliative care program, and I cannot imagine not having the requisite

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health management consultants to guide clinician leader and administrators in these literally life and death decisions.

The bottom line here is that the development of these new graduate programs in health management and health data analytics are crucial to medical policy and clinical decision making and the teaching of the decision making processes to new clinicians. As a clinician leader I fully support the efforts of the leadership of the School of Health Policy and Management at York University to create these programs. The contribution of professionals in this field has significant and measurable impact on our ability to develop health policy and the programs we run to care for our patients and thus has a direct impact on the health of Canadians.

Yours truly,

Sandy Buchman MD CCFP (PC) FCFP
Freeman Family Chair & Medical Director
Freeman Centre for the Advancement of Palliative Care
North York General Hospital, Toronto

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February 11, 2021

RE: *Health Management and Health Data Analytics Field (Graduate Program in Health)*

Dear Committee,

It is my pleasure to write a letter of support for the Graduate Program in Health – New Field in Health Management and Data Analytics. North York General has a strong and excellent relationship with York University and this program will also bring great opportunities to our organizations.

As a hospital and health care system we rely on data to make many decisions to guide patient care, hospital functions, system integration and beyond. This has been especially notable during this pandemic. Data guides these highly important discussions, decisions and outcomes. The synergy for this work is based on both health management and health informatics which aligns so well for this newly proposed program.

As a specific example and as it relates to the current pandemic, Incident Management Structures at a local hospital level, systems integration such as Critical Care and overarching government decisions require the knowledge from organizational psychology and behavior along with information management to determine a course of action that has significant outcomes. The lessons learned during the course of the pandemic will be critical to future health care and system policies thus a very timely submission for this new program.
North York has successfully worked with several faculty members in the School of Health Policy & Management (e.g. Professors Ahmad, El Morr, Ginsburg) over the last few years to help us harness certain clinical and administrative to make decisions (e.g. in the context of delivering care across the continuum for heart failure patients). The proposed program can hopefully provide ongoing opportunities for collaboration, including for new graduate student research projects.

Please feel free to contact me for any further information. Wishing you success with this submission.

Stay well.

Sincerely,

Susan Woollard

Susan Woollard
Vice President Clinical Services, Seniors Health Centre
Chief Nursing Executive

February 7, 2021

Liane Ginsburg
Professor and Chair
School of Health Policy & Management
Faculty of Health, York University
4700 Keele Street
Toronto, ON. M3J 1P3

Re: Support letter for the proposed new field in Health Management & Health Data Analytics in the Graduate Program in Health at York University

Dear Dr. Ginsburg,

Health Management and Health Data Analytics are key drivers in healthcare transformation. Moreover, Health Data is fueling the engine that allow leaders in healthcare the ability to make strategic decisions in order to ensure our health system operates efficiently. I am in full support of the proposed new are of graduate study that brings together healthcare management and health data analytics. Simply collecting data is not enough – healthcare organizations would benefit from appropriate data analytics and management in order to strategically implement actionable insights across the health system to improve quality of patient care, ensure compliance, personalize user experiences and bring about innovation. The proposed new academic area of study will ensure modern data platforms can enable critical analytics. The need for graduates at the masters and doctoral level with this kind of innovative training is required in the health sector

I am in full support of the academic vision.

Sincerely,

Jake Tran, RRT., AHLP., MSc.-CH., Ph.Dc
President & CEO

The Salvation Army Toronto Grace Health Centre
650 Church Street, Toronto, Ontario M4Y 2G5
Tel (416) 925-2251 Fax (416) 925-3211
www.torontograce.org

UNIVERSITY OF ALBERTA

22 February 2021

Liane Ginsburg
Professor & Interim Cahir
School of Health Policy & Management
Faculty of Health, York University
Toronto, Ontario

Dear Liane,

I am writing to offer support for the field of *Health Management & Data Analytics*. As you know within my longitudinal, pan Canadian, applied health services *Translating Research in Elder Care* program, we have worked for over a decade to build a robust system of measurement and data feedback in LTC. What we have discovered is that having relevant, high quality data is necessary, but woefully inadequate for change. The data and findings must be relevant to end users, i.e., about *modifiable* things they can and need to change, it must be in a useable, digestible, accessible format, it must be fed back in an appropriate systematic approach. However, even if all of those elements are in place – the managers in the system, let alone clinicians and front-line workers have no preparation in how to use it for change. They can set goals but it falls apart at action planning and implementation. These are critical skills. They also need practical, accessible ways to evaluate change. Most analytics departments are far from the point of care and do not work within a framework that values the essential importance of *clinical microsystems* as *the* place where quality is made. Hence do not attend to the people in those microsystems and their need for actionable data and an action system that supports them to use it for change.

A graduate program such as you have described to me would contribute importantly to health system improvement. It would develop knowledge and systems, prepare a generation of knowledgeable individuals equipped to work in the system for change and, over time, would have an important influence on health system improvement. Of course, the more research findings and outputs get out, the better. I certainly know that if virtual courses and perhaps physically present internships were available, my graduate students and those of others would be keen to participate. From my own experience, I am acutely aware as well, that infusing organizational behavior theory and multi-level decision making is much needed among our young scholars. The health professions do not bring this to the table generally speaking.

It is an exciting undertaking; I wish you and your department/faculty well in achieving the vision.

Sincerely yours,

Carole A Estabrooks CM, PhD, RN, FRSC, FCAHS, FAAN, FCAN
Professor & Canada Research Chair (Tier 1)
In Knowledge Translation
Faculty of Nursing

Change to Program/Graduate Diploma Academic Requirements Proposal Form

The following information is required for all proposals involving a minor modification to program/graduate diploma academic requirements. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. Program/Graduate Diploma: Graduate Diploma in German and European Studies

2. Effective Session of Proposed Change(s): Fall 2022

3. Proposed Change(s) and Rationale

Background on the diploma and current status:

Following the closing of the Canadian Centre for German and European Studies at York (CCGES) in 2015, the graduate diploma in German and European Studies was rehoused to the Department of Politics. While some changes were made to the diploma requirements shortly after the closure of CCGES, recent faculty departures, sabbaticals and administrative roles prevented these from taking hold and contributed to a period of several years during which the diploma program did not actively admit students. Nonetheless, students remain in the program, and some have recently graduated with the diploma.

The European studies community at York University is diverse and scattered across different faculties and departments. The graduate diploma typically attracts students from across LA&PS including political science, humanities, social and political thought, anthropology, communications and development. In addition, a small number of students from departments (now) outside the faculty including Environmental studies, geography, theatre and performance and dance have been active members and graduates from the diploma program. The diploma offers the possibility to bring faculty and students from across the university together. This can be especially advantageous for students looking for supervisory committees and networking opportunities.

We propose two main changes: 1) changing the name; 2) updating the requirements to make better use of existing resources. With these changes, we propose to revitalize the diploma, making it more relevant and attractive to students. In particular, we hope to make the diploma more accessible to Master's students including Glendon's MPIA program, and MA students from a variety of LA&PS departments. The proposed changes will furthermore bring the requirements of the diploma more in line with other graduate diplomas at York.

a) A description of the proposed modification(s) and rationale, including alignment with academic plans.

The proposed minor changes are two-fold. First, we propose a **name change** of the graduate diploma in German and European Studies to the **Graduate diploma in European Studies.**

When it was connected to CCGES the diploma mandate focused specifically on *German* and European studies. This was partially a reflection of the fact that CCGES was developed as part of a larger network of German Academic Exchange Centres (DAAD). This connection has weakened over the years and the dominance of "German" does not accurately reflect the focus of the faculty members and students. The name "German and European Studies" tended to give students the impression that they must be studying German and/or Germany in order to become involved in the centre. The proposed name change is intended to counter this impression and give a more accurate reflection of the scope of European studies at York.

This change reflects a broader mandate and signals an understanding of European studies as encompassing all European states as well as the languages and literature, culture, history and politics of individual states and

regions and of the European Union and Europe as a whole. This will increase the interdisciplinarity of the diploma and attract more students to the program. It is also in line with the learning outcomes of the graduate diploma (see attached file).

Secondly, we propose minor changes which **update the requirements of the diploma** bringing these more in line with other diplomas in LA&PS and making better use of existing resources. These changes will:

a) add flexibility to the requirements to allow students from a wide range of disciplines to participate in a manner that is consistent with their program requirements;
b) replace the Colloquium and Summer school requirements with ongoing lecture series and requirements to take existing courses in LA&PS. Promoting increased involvement in existing courses and lecture series will help to foster a lively European studies community at York University. It will furthermore serve to bring the diploma students together in a variety of settings with non-diploma participants, boosting the visibility of the diploma program and encouraging an exchange of ideas beyond the immediate diploma community.

b) An outline of the changes to requirements and the associated learning outcomes/objectives, including how the proposed requirements will support the achievement of program/graduate diploma learning objectives.

The diploma is awarded in conjunction with a regular graduate degree at York University. As such, the diploma aims to complement the learning outcomes of various departments (not only political science), as well as introduce learning outcomes that are specific to European Studies. During previous revisions, the Graduate diploma coordinator worked with York Teaching Commons to develop a set of learning outcomes for the Diploma. These are attached as a separate document.

Two of the main learning objectives of the diploma are to introduce students to the "critical concerns and debates in the field" and to "draw connections between scholarship in different fields". The proposed changes will encourage increased interdisciplinary and cross-field scholarship in various ways. The Research Colloquium requirement has been replaced with a requirement to complete course(s) from a list of approved courses related to European Studies. This gives students increased opportunity to engage with the scholarly debates as they are presented in the course, and to develop this through the coursework. Students will be presented with a list of courses from across LA&PS that they can select from in order to fulfil the diploma requirements (proposed course list is attached). These courses all broadly relate to European studies, thus meeting students' interests, while encouraging them to explore beyond traditional disciplinary boundaries. In addition, the courses will help to overcome the scheduling difficulties that often made it difficult for students from across the faculty to agree upon a single time to meet for the Research Colloquium.

An additional learning objective is to "communicate ideas and arguments clearly...show an awareness of the needs and conventions of presenting scholarly work in public settings...". The amendment to replace the Summer Seminar with ongoing lecture series will serve to offer students more opportunity to engage with a broad scholarly community and take part in workshops and guest lectures. It also offers substantially more flexibility to students in terms of when and how to fulfil this requirement. In contrast to the set summer school, this is a much more flexible requirement.

These changes also complement the learning objectives of the department of Politics as set out for both the MA and PhD students. For example, the department's documents highlight workshops, lecture series and seminars as various means of reaching and assessing the objectives. The diploma will offer further opportunity to support these objectives and to encourage students to engage critically with a particular field or concept from a number of different perspectives (Politics graduate degree learning objectives is attached).

The remaining changes are quite minor and aim to recognize a broad understanding of European Studies (rather than German and European Studies) and to clarify requirements so that a greater number of students can benefit from the diploma.

c) An overview of the consultation undertaken with relevant academic units and an assessment of the impact of the modifications on other programs/graduate diplomas.

The diploma was originally designed by the executive members of the affiliated ORU, CCGES. Because the ORU was disbanded several years ago, there is no formal infrastructure to redesign the diploma. In order to achieve broad consultation, the Diploma Coordinator, Dr. Heather MacRae, engaged in ad hoc and organized consultations with members across the university with an interest in European Studies. Potential participants were contacted by email based on 1) their previous connection to CCGES and/or 2) teaching and research in European issues; and/or 3) on the recommendation of other community members. An initial zoom meeting among all interested members was well attended and generated the decision to redesign the diploma requirements. A committee was selected to work on these.

The proposed changes were drawn up by a committee of four members, representing three different departments (Politics, Anthropology and Glendon Political Science) and circulated to interested members of the European Studies community for comment.

Support was specifically obtained from the department of Politics and the Graduate Program of Political Science; Glendon MPIA, History and Humanities. These letters are attached.

d) A summary of any resource implications and how they are being addressed.

It is not expected that any additional resources will be required. Rather, it is anticipated that fewer resources will be required, as both the Colloquium and Summer Seminar relied on faculty offering their time over and above their usual teaching responsibilities. In addition, by connecting the diploma requirements to existing speaker's series, we hope to increase participation in some of these existing projects, thus making better use of current resources.

e) A summary of how students currently enrolled in the program/graduate diploma will be accommodated.

Students currently enrolled in the program will be advised of the changes that are being made. Students who have completed the diploma requirements (except the dissertation) will be given the opportunity to complete under the old requirements. Students who are enrolled but have not yet completed several requirements may choose to switch to the new requirements. In all cases, the Diploma coordinator will work with the students to find the path to completion that is more advantageous to the student.

4. Calendar Copy

Using the following two-column format, provide a copy of the relevant program/graduate diploma requirements as they will appear in the FGS Calendar - http://gradstudies.yorku.ca/current-students/regulations/program-requirements/.
Please note: Senate requires that FULL Calendar copy be provided. Please include the entire *graduate program/diploma section, not just text that is being revised.*
Please clearly and visibly indicate how graduate program/graduate diploma information has been changed using strikethrough (left column), bold, underlining, colours, etc. *(right column).*

Existing Program/Graduate Diploma Information (change from)	Proposed Program/Graduate Diploma Information (change to)
In addition to completing relevant courses successfully, Graduate Students must: a) write a major research paper, thesis or dissertation on a topic relevant ~~to the Centre's mandate~~ and approved by the Graduate Diploma Coordinator; b) ~~participate in the Centre's annual Summer Seminar~~	In addition to completing relevant courses successfully, Graduate students must: a) write a Major Research Paper, thesis or dissertation on a topic relevant to European studies and approved by the Graduate Diploma Coordinator. If the degree program is a coursework program, students may satisfy this requirement by

~~**(German & European Studies 6000.03: Topics in Germany in the New Europe**; OR **German & European Studies 6010.03: Topics in German Cultural Studies in the European Context)** or an equivalent course~~;	completing two research papers of at least 15 pages each and with a focus on topics relevant to European Studies, in courses with grades that satisfy Faculty of Graduate Studies (FGS) requirements;
c) ~~participate in the Graduate Research Colloquium (while a requirement for the graduate diploma, this colloquium is not graded and carries no course credit);~~	b) Attend a minimum of two European-focused guest lectures, seminars, or presentations in each year of their degree. Generally, this will mean at least 2 or 4 seminars for MA students (depending on degree length) and 8 or more for PhD students. Presentations will be announced and made available to diploma students via an email listserv.
d) develop and demonstrate ~~a knowledge of German appropriate to their speciality and level or another~~ European language (other than English); and,	c) Complete a minimum of 3.0 credits from an approved list of courses. In exceptional circumstances, other courses may be approved by the Diploma Coordinator.
e) successfully complete a study period/research stay or an internship of one semester (at least six weeks) in ~~Germany or in other European countries~~. Students may receive credit for such courses according to accepted practice at York.	d) Develop and demonstrate competency in a European language (other than English) at a level appropriate to and relevant for their area of study; and
	e) successfully complete a study period/research stay or an internship of at least six weeks (MA students) or 12 weeks (Ph.D. students) in a European country to be assessed by the Diploma Coordinator. Students may receive credit for such courses according to accepted practice at York. Some financial support may be available to eligible students.

Please submit completed forms and required supporting documentation through the LA&PS Curriculum Toolkit website.

Potential Courses Acceptable for the Partial Completion of the
Graduate Diploma in European Studies

Please note that this list will be expanded and/or revised as necessary

Course Number	Course Title	Notes
GS/POLS 6655 3.0	Theories and Institutions of European Integration	cross listed with HIST 5380
GS/POLS 6656 3.0	Politics and Policies of European Integration	
GS/POLS 5205 3.0	The New German Politics and European Integration	
GS/HIST 5051 3.0	Cultural History of Europe 1400-1800	cross-listed with HUMA 6109 3.0
GS/HIST 5355 3.0	Modern European Cultural History: War and Peace in the Twentieth Century	
GS/HIST 5360 3.0	European Encounters: Europeans in the Wider World since 1500	
GS/HIST 6040 6.0	Europe, 1815-1945	
GS/HIST 6041 3.0	Issues in Nineteenth and Twentieth Century Mediterranean Europe	
GS/HUMA 6220 3.0	Ethics and Interpretation: Readings in European Thought	crosslisted with SPTH 6650
GS/HUMA 6233 3.0	Faith, Reason, Atheism: European Thought and the Irreducibly Other	crosslisted with; SPTH 6150 3.0
GS/HUMA 6229 3.0	The Return of the Religious in Contemporary Continental Thought	
GS/HUMA 6336 3.0	Modernity and the Relationship between the Religious and the Secular: Reading Hegel and Kierkegaard	
GS/PIA 6309 3.0	Europe in International Affairs	
GS/PIA 6345 3.0	Politics and Public Policy in Europe / La politique et les	

	politiques publiques dans l'Union européenne	
GS/ SPTH 6193 3.0	Ethics and Alterity: Connecting Disparate Discourses in European Thought	crosslisted with HUMA 6234 3.00; SPTH 6193 3.00

Learning Outcomes for the Diploma in German and European Studies (proposed name change to Diploma in European Studies)

	Requirements of the Diploma in European Studies	Learning Outcomes
1. Depth and breadth of knowledge	A broad understanding of European Studies as an interdisciplinary field of inquiry.	articulate the critical concerns and debates in the field. critically analyze and fruitfully debate key readings and debates in European Studies.
2. Research and scholarship	A conceptual understanding and methodological competence in European Studies	situate one's own research interests within this field. draw connections between scholarship in different fields. apply scholarship in different fields in the critical analysis of a research question.
3. Level of application of knowledge	Competence in the research process by applying an existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting	present and explain, without disciplinary jargon, one's own research to an interdisciplinary audience.
4. Professional capacity/autonomy	A high level of professionalism and intellectual independence	confidently and competently engage with peers and senior scholars in the field during Diploma events.
5. Level of communication skills	An advanced communicative skillset, including the ability to communicate ambiguity and complexity	communicate ideas and arguments clearly, both in oral and written forms. Show and awareness oof the needs and conventions of presenting scholarly work in public settings such as academic conferences and publications.
6. Awareness of limits of knowledge	Cognizance of the complexity of knowledge and the potential contributions of interpretation, methods and approaches outside of one's own "home discipline"	elaborate limitations of one's own work and discipline, demonstrated through the respectful and engaged interaction with the work presented and discussed in the presentations and Diploma related events.

Date: May 2021

YORK
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UNIVERSITY

FACULTY OF LIBERAL ARTS & PROFESSIONAL STUDIES

Department of Humanities

262 VANIER COLLEGE
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5158

lapshuma@yorku.ca
huma.laps.yorku.ca

28 May 2021

To Whom it may Concern:

The Graduate Program in Humanities has been asked to comment on the minor changes to the Graduate Diploma in German and European Studies, currently housed in the department of Politics. I took it upon myself to ask a former GPD of our program who is very familiar with German and European Studies to examine the changes and comment. Professor Markus Reisenleitner wrote: “Thank you for this initiative. From my experience as a former GPD and supervising a number of students, I strongly recommend supporting the changes in the diploma. Graduate students in Humanities have profited from the diploma in the past, as it is a useful complement and acknowledgment of expertise for students working in the area, and the changes will make it even more useful and attractive.” Following Markus’s comments, Graduate Humanities fully supports this initiative.

Sincerely,

Victor Shea
Graduate Program Director
Department of Humanities
York University
vshea@yorku.ca

YORK
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FACULTY OF LIBERAL ARTS & PROFESSIONAL STUDIES

Department of Political Science

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Toronto ON
Canada M3J 1P3
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May 25, 2021

The Graduate Program in Political Science strongly supports the Graduate Diploma in European Studies. It will be a major asset to our Graduate Program, as it will be to a number of other Graduate Programs such as Social and Political Thought, Development Studies, Communication and Culture, Humanities, and Anthropology.

The Diploma's learning objectives complement The Graduate Program in Political Science's learning objectives of providing workshops, lectures and seminars.

We see the Graduate Diploma in European Studies as a major asset to our Graduate Program.

Sincerely,

Shannon Bell

Dr. Shannon Bell
Professor
Interim Graduate Program Director
Graduate Program in Political Science

GLENDON CAMPUS
YORK UNIVERSITY

CAMPUS GLENDON
UNIVERSITÉ YORK

Master's in Public and International Affairs

Maîtrise en affaires publiques et internationales

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May 31, 2021

TO WHOM IT MAY CONCERN

This letter is to express the support of Glendon's Master's program in Public and International Affairs (MPIA) for the proposed changes to the Graduate diploma on German and European Studies to become the Graduate diploma in European Studies. The MPIA has a double degree with the Institut d'études politiques, Strasbourg University, France, that is very popular and many of our students have an interest in European affairs. We also have students who are doing their internships in Europe. We are confident that the new graduate diploma will be of interest to our students. The added flexibility to the requirements should also make it easier for our students to complete the diploma. More generally, this initiative could reinforce the partnerships and the synergies between the MPIA and other graduate programs at York offering Europe-related courses.

Please feel free to contact me if you have any questions.

Yours truly,

Dr. Francis Garon
Graduate Program Director
Glendon School of Public and International Affairs
fgaron@glendon.yorku.ca
Tel.: 416-736-2100 ext. 88149

Senate Committee on Tenure and Promotions

Report to Senate

At its meeting of December 16, 2021

For Information

1. Tenure and Promotions Data, 2020-21

The total number of files completed in 2020-21 was 54 as compared with 55 in 2019-20 and 44 in 2018-19. Of the 54 cases, 13 were dealt with by a panel of the Senate Committee on Tenure and Promotions. The rest were reviewed by Faculty-based Senate Review Committees.

A statistical report of files reviewed in 2020-21 is set out in Table 1 and Table 2 with 2019-20 data provided for comparison. The yearly caseload from 2005-06 to 2020-21 is set out in Figure 1.

2. Unit-level Standards

In 2020-21, there was a cleanup exercise of unit-level standards, and several units that had previously submitted standards or revisions received communications from the Senate Committee on Tenure and Promotions.

Additionally, the Committee reviewed standards from 7 units and suggested revisions to find them in accord with the University criteria. An updated status report is attached as Table 3, although it is expected that there may be some further updates as the Committee continues to work with units on the accuracy of its records in relation to standards.

3. Appeals of Denial of Advancement to Candidacy

There were no appeals of denial of advancement to Candidacy in 2020-21.

4. Senate Tenure and Promotion Sub-Committees/Panels

There are six Senate Review Committees constituted at the Faculty level where there are departments, each of them sub-committees of the Senate Committee on Tenure and Promotions:

- Arts, Media, Performance and Design
- Glendon
- Health
- Lassonde
- Liberal Arts and Professional Studies
- Science

The sub-committees are composed of members of the Faculty Tenure and Promotions Committee, plus two members of the Senate Committee on Tenure and Promotions. These sub-committees report annually to the Senate committee, noting issues that have arisen regarding the preparation and adjudication of files.

Files originating with non-departmentalized Faculties (Education, Environmental and Urban Change, Osgoode and Schulich) are considered by a panel of the Senate Committee on Tenure and Promotions. The Senate Committee reports directly to Senate on its work.

Process Matters and Guidance from the Senate Committee

While the vast majority of files are properly prepared and adjudicated, there continue to be some ongoing procedural problems with files:

- There are areas in the file where information is lacking;
- The evidence in the file is not matched to the recommendation;
- A full and balanced report, addressing all the evidence in the file both positive and negative, is not provided;
- Irregularities or lack of clarity in compiling lists of potential referees
- Irregularities in Adjudicating Committee and File Preparation Committee composition

In most cases, the issues identified with files were not sufficiently critical to require re-adjudication, and the review committees simply sent a note back to the Adjudicating Committee so as to inform future preparation and adjudication of files. Of the files completed this year, 2 were referred back to Adjudicating Committees by the Senate Committee on Tenure and Promotions to address issues noted.

The Senate Committee continues to remain concerned with the frequency of procedural irregularities despite regular comment being sent back to Adjudicating Committees. We recognize that committee membership changes, and units are encouraged to have those involved in the tenure and promotion process annually review the policy and procedures and the information available in the T&P Toolkit (https://secretariat.info.yorku.ca/senate/tenure-and-promotions-committee/tp-toolkit/) and to communicate procedural information to all members.

5. COVID-19

Both The Senate Committee on Tenure and Promotions and the Faculty-based Senate Review Committees continue to move forward with their work in spite of the challenges arising out of the COVID-19 pandemic and the move to remote work.

The move to virtual meetings and electronic files (bookmarked for ease of use) has allowed the important work of tenure and promotion to continue and has been well-received at both the Senate and Faculty committee levels.

Thomas Baumgartner, Chair 2020-21

Table 1
Number of Cases Completed 2019-20 and 2020-21
By Type of Application and Gender[1]

Application Type:	Professor		T&P to Associate Professor		Tenure only		Promotion to Associate only		Total Number	
	2020-21	2019-20	**2020-21**	2019-20	**2020-21**	2019-20	**2020-21**	2019-20	**2020-21**	2019-20
Number of Applications	**20**	25	**33**	30	**1**	0	0	0	**54**	55
Female Candidates	**7**	10	**13**	12	**0**	0	0	0	**20**	22
Male Candidates	**13**	15	**20**	18	**1**	0	0	0	**34**	33

Table 2
2020-21 Summary of Review Committee Recommendations to the President
by Decision and Gender

Application	**Positive**		**Delay**		**Tenure without promotion**		**Deny (tenure applications only)**		**TOTAL**
	M	F	M	F	M	F	M	F	
Professor	13	7	0	0	0	0	0	0	20
Tenure and promotion to Associate Professor	20	13	0	0	0	0	0	0	33
Tenure only	1	0	0	0	0	0	0	0	1
Promotion to Associate only	0	0	0	0	0	0	0	0	0

[1] Data in Table 1 and Table 2 cover decisions made between September 1, 2020 and August 31, 2021.

Figure 1

Number of Tenure and Promotion Cases by Year, 2005-06 to 2020-21

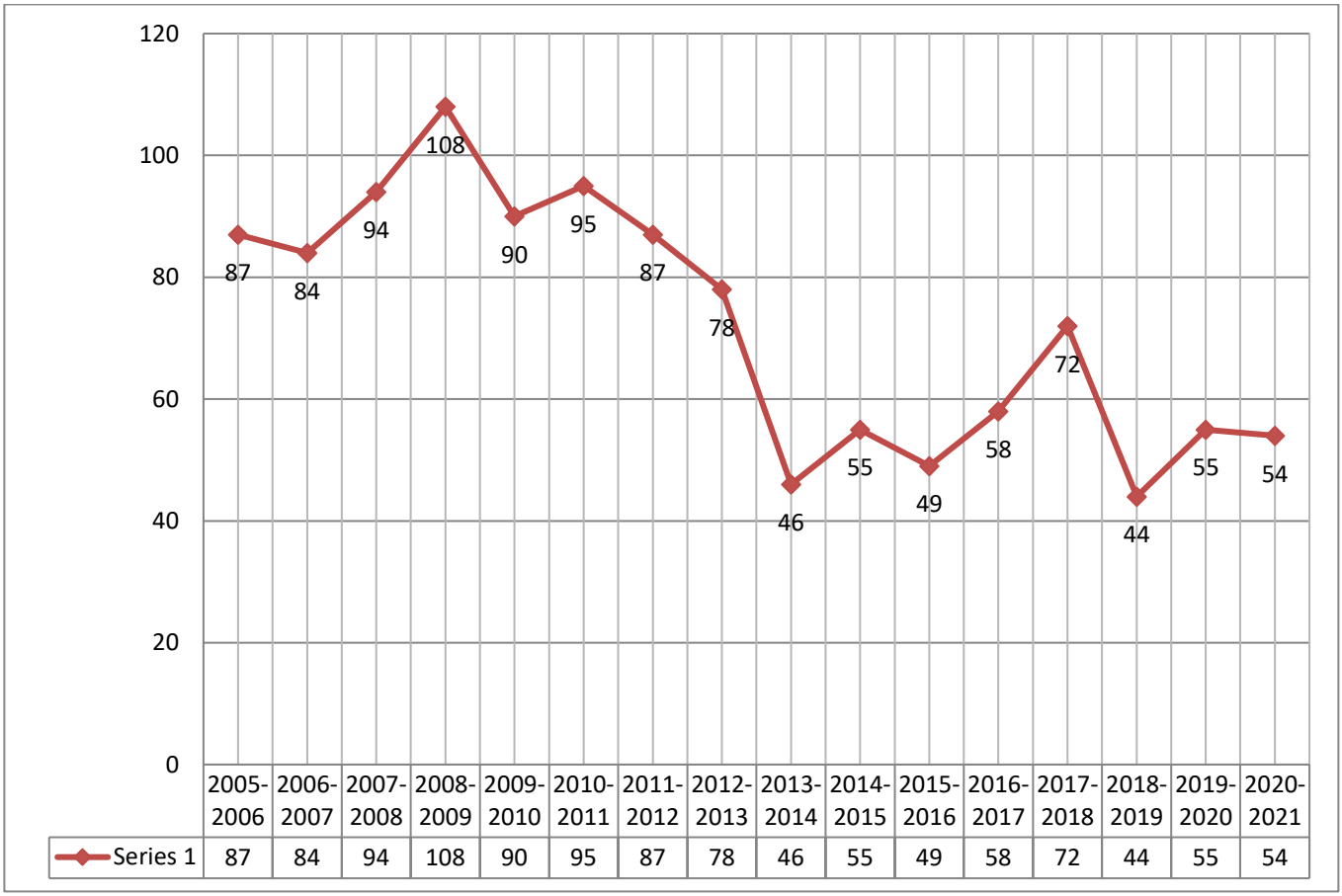

TABLE 3

Unit-level Standards Status Report as of August 2021

UNIT	Latest Senate Review	Status	Professorial Stream		Teaching Stream	
			T&P	Professor	T&P	Professor
School of the Arts, Media, Performance & Design	Professorial Stream: Sep-09 Teaching Stream: Jun-21	**Professorial Stream: In accord** Teaching Stream: Revision required	√	√		
Faculty of Education	Jun-15	**In accord**	√	√	√	√
Faculty of Environmental Studies	Teaching Stream: Nov-20	**In accord**	√	√	√	√
Glendon						
Economics	Oct-10	**In accord**	√			
English	May-20	Revision required				
French Studies	Jun-08	**In accord**	√	√		
Hispanic Studies	Jun-08	Revision required	√	√		
History	May-05	Revision required	√			
International Studies		None submitted				
Mathematics		None submitted				
Multidisciplinary Studies		None submitted				
Philosophy	Oct-08	**In accord**	√	√		
Political Science	Mar-19	**In accord**	√	√		
Psychology		None submitted				
Sociology	Sep-14	Revision required	√	√		
Translation	May-05	Revision required	√	√		
Gender & Women's Studies		Same as LA&PS GSWS				
Faculty of Health						
Health Policy and Management	Oct-08, FP: Mar-19	**In accord**	√	√		
Kinesiology and Health Science	Mar -19	**In accord**	√	√	√	√
Nursing	Profesorial Stream (Full Professor): Oct-20	**T&P: In accord** FP: Revision required	√	√		
Psychology	Mar-19	**In accord**	√	√	√	
Lassonde School of Engineering						
Electrical Engineering & Computer Science	Mar-19	**In accord**	√	√	√	√
Earth and Space Science & Engineering	Mar-19	Needs revision	√	√	√	√
Department of Civil Engineering	Sep-20	Changes to be reviewed	√	√	√	√
Department of Mechanical Engineering	Sep-20	Changes to be reviewed	√	√	√	√
Faculty of Liberal Arts and Professional Studies						

TABLE 3
Unit-level Standards Status Report as of August 2021

UNIT	Latest Senate Review	Status	Professorial Stream		Teaching Stream	
			T&P	Professor	T&P	Professor
Administrative Studies	T&P Jan-08 FP Nov-08	**In accord**	√	√		
Anthropology	May-10	Revision required	√	√		
Communication Studies		None submitted				
Economics	Arts: May-05 ATK: Sep 06 as part of SASIT -	Revision required Revision required	√	√		
English	Jun 10	**In accord**	√	√		
Equity Studies		None submitted				
French Studies	Arts: Jul-08	Revision required	√	√	√	√
Gender, Sexuality and Women's Studies	Feb-13	Revision required	√	√		
Geography	Arts: Jun-08	Revision required	√	√		
History	Arts: Jun-08	Revision required	√	√		
Human Resource Management	Nov-20	Revision required	√	√		
Humanities	Mar-21	T&P and Full revision required	√	√	√	√
Information Technology	ATK: May 08	Revision required	√	√		
Languages, Literatures and Linguistics	Feb-15	Revision required	√	√		
Philosophy		**T&P and Full in accord**	√	√		
Politics	Mar-19	**In accord**	√	√		
Public Policy & Administration	Oct-11	**In accord**	√	√		
Social Science	Mar-19	Changes to be reviewed	√	√		
Social Work	Mar-19	Changes to be reviewed	√	√		
Sociology	Arts: May-05	Revision required	√	√		
Writing Department	Sep-20	Revision required	√	√	√	√
Osgoode Hall Law School	Mar -13	**In accord**	√	√		
Schulich School of Business	June-03; FP Mar-19	**In accord**	√	√		

TABLE 3
Unit-level Standards Status Report as of August 2021

UNIT	Latest Senate Review	Status	Professorial Stream		Teaching Stream	
			T&P	Professor	T&P	Professor
Faculty of Science						
Biology	Oct-20	Revision required	√	√	√	√
Chemistry	Nov-14	**In accord** with minor revisions	√	√		
Mathematics and Statistics	Mar-19	**In accord** with minor issues	√	√	√	√
Physics and Astronomy	Oct-20	Revision required	√	√	√	√
Science & Technology Studies	Jun-10	**In accord**	√	√	√	√
NOTES:						
In accord = in accord with University criteria and procedures.						
None submitted means they have not yet been submitted for review by the Senate Committee on Tenure and Promotions.						

The Senate of York University – Minutes

Naming Meeting: Thursday, 25 November 2021, 3:00 pm via Zoom

M. Roy (Chair)	S. Grace	R. Nandan	M. Winfield
C. Brushwood Rose (Vice-Chair)	C. Graham	N. Neill	S. Winton
P. Robichaud (Secretary)	J. Grant	A. Norwood	R. Zacharias
I. Abdi	R. Grinspun	R. Ophir	G. Zhu
M. Adachi-Amitay	D. Gruspier	K. Ozowe	
N. Agrawal	M. Guzman	D. Palermo	
M. Annisette	M. Hamadeh	P. Park	
L. Appel	L. Hébert	V. Pavri	
J. Aryaan	E. Hessels	L. Philipps	
A. Asif	A. Hilliker	W. Pietro	
G. Audette	R. Hornsey	M. Poon	
A. Badruddin	M. Hosale	C. Popovic	
T. Baumgartner	A. Hovorka	S. Premji	
A. Belcastro	U. Idemudia	A. Pyée	
D. Berbecel	M. Karakul	P. Rahimpoor-Marnani	
R. Bhatla	S. Karimi	S. Rehaag	
K. Bird	P. Kholer	V. Saridakis	
N. Blake	J. Kirchner	R. Savage	
M. Bloom	T. Knight	A. Seifollahi	
MH. Budworth	L. Korrick	T. Shanahan	
D. Cabianca	A. Kraljević	L. Sloniowski	
N. Canefe	K. Krasny	B. Spotton Visano	
T. Choi	A. Kusi	C. Steele	
J. Clark	P. Lakin-Thomas	K. Tasa	
E. Clements	M. Lambert Drache	T. Theophanidis	
J. Conder	G. Langlois	M. Thomas	
S. Cote-Meek	H. Larochelle	K. Thomson	
A. Czekanski	M F. Latchford	P. Timmerman	
C. Da Silva	J. Lazenby	G. Tourlakis	
S. Day	N. Lemish	D. Triki	
M. Dodman	R. Lenton	P. Tsaparis	
A. Di Domenico	S. Liaskos	I. Uwanyiligira	
S. Ehrlich	K. Lo	C. van Daalen Smith	
M. Elghobashy	T. Loebel	G. van Harten	
J. Etcheverry	D. Matten	G. Vanstone	
D. Fernandez	C. McAulay	A. Viens	
M. Fiola	P. McDonald	R. Wang	
L. Fromowitz	A. McKenzie	S. Watson	
D. Gelb	B. Meisner	N. Waweru	
M. Giudice	D. Mittal		
J. Goodyer	M. Morrow		

The Senate of York University – Minutes

1. Chair's Remarks

The Chair, Professor Mario Roy of Glendon College, welcomed Senators to the meeting. He acknowledged with sorrow the recent passing of two faculty colleagues, Professors Emeriti Doris Nicholls and Carol Zemel.

2. Business Arising from the Minutes

There was no business arising from the minutes.

3. Inquiries and Communications

No inquiries and communications were received.

4. President's Items

President Lenton reported on the following items:

- continued prioritization of the health and safety of the community and acknowledgement that the University will continue to follow the advice of health and safety officials throughout the planned full return to on-campus academic activities for the winter 2022 term
- the development of a Winter Safety Strategy, including a newly refreshed YU Screen interface, a revised mask protocol, and a Care Ambassadors Program, which will support community members returning to campus by providing information on wayfinding and general campus services
- an update on the Ontario government's Fall Economic Statement, which indicates stability in funding for the post-secondary sector over the next two years
- York's continued advocacy efforts with members of the Council of Ontario Universities to position universities as leaders in the province's recovery
- York's recent signing of the Scarborough Charter on Anti-Black Racism and Black Inclusion in Canadian Higher Education. The Scarborough Charter is a national pledge to ongoing action against anti-Black racism and further progress toward Black inclusion
- recent progress made on the University's proposal to the Ontario government supporting the establishment of a new School of Medicine

- the forthcoming launch of the Institutional Sustainability Strategy and Progress Report for 2020–21
- recent developments on the University's work to develop a Campus Vision and Strategy for the future of the Keele campus edge lands
- the Kudos report, highlighting that in 2023, York University will host the Congress of the Humanities and Social Sciences, the largest academic gathering in Canada

The monthly "Kudos" report on the achievements of members of the York community can be accessed with other documentation for the meeting.

Committee Reports

5. Executive Committee

a. Information Items

The Executive Committee's information items included the following:

- its ongoing monitoring of the impact of the COVID-19 pandemic on academic activities, with actions pertaining to the disruption outlined in its written Report
- its approval of Student Senate Committee members nominated by the Student Senators Caucus
- its approval of the individual designated by the Organized Research Units' (ORU) Council of Research Directors to serve on the Academic Policy, Planning and Research Committee
- its preliminary discussion of the scope of the 2021-2022 Senate Rules review exercise
- its consideration of a request to have a Senate discussion of the academic implications of the Anti-Black Racism Framework and the draft Action Plan on Black Inclusion
- an update on its membership for 2021-2022
- the anticipation of a December Senate meeting
- the convening of the Sub-committee on Equity in the coming weeks

6. Academic Policy, Planning and Research (APPRC)

a. Provost's Autumn Report

In introducing the item, APPRC Chair Senator Brenda Spotton Visano, indicated that, as the Committee responsible for recommendations to Senate on academic plans and

advising on allocation of resources, APPRC previewed and discussed the Provost's Report on complement and enrolment earlier in the month, with its reflections detailed in the written Report.

Speaking to presentation slides included in the appendices to the agenda, Provost Philipps highlighted that enrolments for FW2021-2022 are very close to targets, with a 6.4% increase in new intakes over the 2020 cycle. However, there has been a notable decrease in international intakes, comprising of a 12.7% and 8.8% decrease amongst visa 101 and visa 105 students, respectively. Graduate applications have increased by 12.3% over the 2020 cycle. In view of decreasing international applications across the sector, work has continued on the development of strategies and mitigation efforts to support international recruitment in future years.

Provost Philipps also provided Senators with a briefing on recent developments related to York's faculty complement. Members heard that progress has continued on the goals outlined in the University's Faculty Complement Renewal Strategy, with a particular focus on improving faculty:student ratios institutionally and enhancing supports for contract faculty. In the area of diversification, it was noted that of the tenure track appointments made thus far in 2021-2022, 82% of professorial stream hires and 72% of teaching stream hires identify as a member of one of the federally designated groups.

b. Information Items

APPRC reported on the following items:

- its discussion with the Provost on the Faculty Complement Renewal Strategy and enrolments
- its monthly report to Senate on Markham Campus planning
- its receipt of a comprehensive briefing on the strategic review process aimed at the renewal and repositioning of Glendon's academic offerings in the current post-secondary environment
- its discussion of the Draft Action Plan for the implementation of the Framework to address Anti-Black Racism
- an update on its membership for 2021-2022

7. Academic Standards, Curriculum and Pedagogy (ASCP)

a. Addition of the Markham Campus location for the Common First-year Engineering programming for the BEng degree programs in Engineering, Lassonde School of Engineering

It was moved, seconded and carried**, "that Senate approve the addition of the Markham Campus location for the Common First-year Engineering programming for the BEng degree programs in Engineering, housed in the Lassonde School of Engineering as set out as Appendix A, effective FW 2023-2024."**

b. Addition of the Markham Campus location for the First-year Foundational Science programming for BSc degree programs, Faculty of Science

It was moved, seconded and carried**, "that Senate approve the addition of the Markham Campus location for the first-year Foundational Science programming for BSc degree programs housed in the Faculty of Science, as set out in Appendix B, effective FW 2023-2024."**

c. Establishment of a BASc degree option in Computer Science for Software Development, Markham Campus, Lassonde School of Engineering

It was moved, seconded and carried**, "that Senate approve the establishment of a BASc degree option in Computer Science for Software Development at the Markham Campus, housed within the Department of Electrical Engineering and Computer Science in the Lassonde School of Engineering, set out as Appendix C, effective FW2023-2024."**

d. Information Items

ASCP reported on its continued review of proposals for curricular programming at the Markham Campus and approval of the following minor modifications to curriculum:

Faculty of Science

Minor Changes to Degree Requirements for the BSc program in Environmental Biology

Minor Changes to Degree Requirements for the BSc program in Biology, Biomedical Science Stream

8. Other Business

There being no further business it was moved, seconded, and carried **"that Senate adjourn."**

Consent Agenda Items

9. Minutes of the Meeting of 28 October 2021

The minutes of 28 October 2021 were approved on consent.

Mario Roy, Chair _____

Pascal Robichaud, Secretary _____

Schulich School of Business Memorandum

To: Faculty Council, Schulich School of Business
From: Shanker Trivedi, Program Director of the MACC/DIAc/DAAc programs
Date: June 21, 2021
Re: Offering Term 0 courses of the Diploma in Intermediate Accounting program in Hyderabad as an additional location with admission requirements unique to it.

Motion:

That Faculty Council approve the following changes to the Master of Accounting and the Diploma in Intermediate Accounting:

1. Add an additional location in Hyderabad, India (DIAc)
2. Amend the admission requirements for students to study in this location (DIAc/MAcc)

Rationale:

The Schulich Hyderabad campus is currently unused during the summer months and the proposed DIAc Term 0 program in Hyderabad allows for the use of these facilities over these summer months. This proposal envisages offering Term 0 of the DIAc program in Hyderabad in the summer to graduates of three-year business and non-business programs from Indian universities assessed as being equivalent to four-year degrees by CPA Canada, and who meet the minimum 120 credit hour requirement of CPA Canada based on a course-by-course evaluation.

The existing admission standards for admission into the DIAc and MAcc programs require a four-year bachelor's degree. In contrast, most business, arts and science degrees in India are three-year degrees. These degrees are generally assessed as being equal to four-year degrees by CPA Canada. Therefore, currently we are potentially preventing a significant number of highly qualified students from India from applying to our DIAc/MAcc programs, even as we struggle to admit quality students from other locations.

Major Modifications Proposal

1. Faculty: Schulich School of Business

2. Department: Accounting Area

3. Program: Diploma in Accounting/Master of Accounting

4. Degree Designation: Diploma in Intermediate Accounting (DIAc)/Master of Accounting (MAcc)

5. Type of Modification: Addition of a new location in Hyderabad, India for Term 0 of the DIAc/MAcc program and changes to the admission requirement specific to this location.

6. Location: Hyderabad, India. (during summer months, in addition to current program at the Keele campus)

7. Effective Date: Summer 2022

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8. Provide a general description of the proposed changes to the program.

   The proposal seeks to add a new location option at Hyderabad, India for Term 0 of the DIAC program, with admission requirements unique to that location. On completion of Term 0 in Hyderabad the students of this program will join other DIAc students of the existing DIAc/MAcc program from Term 1 onwards at the Keele campus in Toronto.

9. Provide the rationale for the proposed changes.

   Accounting designations in India such as the Chartered Accountant, Cost Accountant, Company Secretary are highly desirable designations. For example, currently close to 850,000 students are enrolled with the Institute of Chartered Accountants of India. Many of these individuals on obtaining their designation also choose to immigrate abroad, including to Canada, for career and other prospects. Canada is especially attractive for these professionals given the need for high quality immigrants and professionals in the expanding Canadian labor market. However, the transition from India to Canada is not seamless for these individuals given that the Indian designations are not accorded parity status by the Canadian Chartered Professional Accountant (CPA) institute. Holders of these Indian designations are required to pass the Common Final Exam (CFE) exam of the Canadian CPA Institute, a task that many of them fail to achieve given they lack appropriate training in the case method used on the CFE. Further, the Indian

designations are not well recognized in the Canadian job market. Therefore, immigrant Indian accounting professionals often face significant difficulty in gaining entry into the Canadian job market and progressing in their careers even after securing a job.

The DIAc/MAcc program at Schulich allows international students to get trained all the way to the CFE. The unique Schulich Accounting Case Method allows our graduates to become familiar with the case method used on the CFE from day 1 of the program. Further, the DIAc/MAcc program is regarded as an elite program by recruiters and employers in Canada, thereby ensuring that our graduates not only obtain attractive jobs relatively easily in Canada but also allows them to progress in their careers. However, the existing DIAc/MAcc program in Toronto requires applicants to hold a four-year undergraduate degree. In contrast, most business, arts and sciences degrees in India are only for three years. This means that under the existing admission requirement many academically gifted and promising students in India are prevented from being admitted into our DIAc/MAcc program. At the same time, we want to continue to require a four-year undergraduate degree of applicants to our program in Toronto to maintain high academic standards. We want to make an exception to the four-year degree requirement only for the Term 0 students in India since we are confident in attracting high quality students to that program even with the revised admission requirement. We plan on admitting a cohort of 50 students into the India DIAc Term 0 every academic year starting hopefully from 2022. We will admit students of good academic standing holding three- or four-year degrees, who meet the 120-credit hour equivalent requirement of CPA Canada as assessed by the World Education Services (WES), into the proposed program. Based on our discussions with CPA Ontario, typically WES assesses an Indian student's 3-year degree as being equivalent to a 4-year Canadian bachelor's degree, when certain criteria are met. We will use the same criteria as required by CPA Canada for admitting students in the proposed program in India, in addition to our other usual admissions criteria.

Our master's program is equivalent to the Professional Education Program (PEP) program offered by the CPA institute to prepare them for the Common Final Exam (CFE) of the institute. The 120-credit hour requirement referred to above is enforced by the CPA institute for admitting students into their PEP program. Therefore, using the same criteria as those imposed by the CPA institute, in addition to the other admissions criteria currently in place, including requirements relating to certain prerequisites, for admitting students into Term 0 of the DIAc at the Hyderabad location will ensure that the admitted students will have adequately mastered those learning objectives and possess the competencies required to successfully complete our DIAc and MACC programs.

10. Comment on the alignment between the program changes with Faculty and/or University academic plans.

The proposed Term 0 of the DIAc program in Hyderabad will be delivered over the summer semester at the Schulich Hyderabad campus. Currently, only the Schulich MBA India program is being offered over the fall and winter semesters at the Hyderabad campus. Therefore, the Schulich India physical facility is vacant during the summer semester. The current Program Director of the Schulich India MBA program is very supportive of this initiative given the very beneficial sharing of physical resources that the proposed addition of new location will make possible. The proposed location will complement the existing DIAc/MAcc program by attracting a new pool of students that have hitherto not been targeted by the existing program located on Keele campus.

11. If applicable, provide a detailed outline of the changes to the program and the associated learning outcomes, including how the proposed requirements will support the achievement of program learning outcomes. Programs should have eight to twelve program learning outcomes. Describe how the achievement of the program learning outcomes will be assessed and how that assessment will be documented. (i.e., the mapping of the courses to the program learning outcomes; graduate outcomes).

    There will be no change from the learning outcomes that currently apply to the existing DIAc/MAcc program offered at the Keele campus. The method of course delivery and the method of assessment in Hyderabad of the Term 0 students will also be identical to those used in the current DIAc/MAcc program offered at the Keele campus.

12. 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.

    Consultations were undertaken within Schulich, especially with the Program Director of the Schulich India program and the senior management of Schulich. As indicated previously, the Program Director of the Schulich India program is highly supportive of the current proposal given that it does not conflict with but compliments the existing Schulich India MBA program in terms of the more efficient utilization of the physical space in Hyderabad, India. The senior management team within Schulich, including the current acting dean, associate dean academic, the associate dean students, and the management committee are all supportive of the proposed program. Consultations were also held with the two areas within which two of the courses taught in Term 0 of the DIAc are housed—the OMIS area for OMIS 6710 and the Policy area for MGMT 6200. Both areas and the concerned course coordinators are supportive of this initiative as the related emails attached to this proposal attest. The Schulich DIAc/MAcc program is the only program within York University that offers a master's degree in accounting. Therefore, the

proposed changes have no impact on other programs within York University.

13. If applicable, describe changes to any admission requirements and on the appropriateness of the revised requirements for the achievement of the program learning outcomes.

    All bachelor's degrees in India, other than professional degrees like medicine and engineering, are three-year degrees. Many of these three-year degree programs are adjudged to be equal to Canadian four-year master programs by CPA Canada, meeting their 120-credit hour equivalent requirement as assessed by the World Education Services (WES), when certain criteria are met. We will use the same criteria as required by CPA Canada for admitting students in the proposed program in India, in addition to our other usual admissions criteria.

14. 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.

    The proposed Term 0 of the DIAc program in Hyderabad will be delivered over the summer semester at the Schulich Hyderabad campus. Currently, only the Schulich MBA India program is being offered over the fall and winter semesters at the Hyderabad campus. Therefore, the Schulich India physical facility is vacant during the summer semester. A maximum of six faculty members/instructors will need to travel to India and stay there for the 4-6 weeks (length of term yet to be decided) duration of the term in India. The variable costs in relation to these faculty members such as travel, stay etc. will be at the same rate as the costs borne in relation to faculty members teaching in the existing MBA program in India. The courses that these faculty members/instructors would have otherwise covered in Toronto will now have be covered by other faculty members/instructors. We do not envisage any problems in obtaining these additional teaching resources given the rich and deep pool of teaching resources available to the accounting area of Schulich. As pointed out earlier, the current Program Director of the Schulich India MBA program is very supportive of this initiative given the very beneficial sharing of physical resources that the proposed program will make possible. The senior management team within Schulich, including the current acting dean, associate dean academic, the associate dean students, and the management committee are all supportive of the proposed program.

15. When applicable, comment on the appropriateness of the revised mode(s) of delivery for the achievement of the program learning outcomes.

    The revised mode of delivery in terms of offering Term 0 of the DIAc program in Hyderabad has no impact on the achievement of the program's learning outcomes, since the content delivered and the mode of delivery will be identical to what is currently in place at the Keele campus.

16. Is the assessment of teaching and learning within the program changing? If so, comment on the appropriateness of the revised forms of assessment to the achievement of the program learning outcomes.

    No changes to the assessment of teaching and learning are envisaged under the proposed program change.

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

    The proposed program will have no impact on students currently enrolled in the program in the Keele campus of York University. Thus, there is no necessity for providing any accommodation to them consequent to the proposed program.

18. Provide the following appendices:

    A) Program Learning Outcomes (eight to twelve)

    B) 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.

Appendix A
Program Learning Outcomes

1. Breadth and Depth of Knowledge	Have demonstrated levels of proficiency in all of the technical competency areas of accountancy including: Financial Reporting, Management Accounting, Audit and Assurance, Strategy and Governance, Finance, and Taxation
	Demonstrate a thorough knowledge and understanding of all of the standards that govern the preparation and audit of financial statements for public and private companies.
2. Research and Scholarship	Can demonstrate their ability to conduct situation-based research using available financial and other information about business entities;
	Can generate well-structured and formatted reports on the basis of this research;
	Can apply the results of academic research in accounting case situations;
	Demonstrate through relevant applications a general familiarity with the top scholarly outlets in the field.
3. Level of Application and Knowledge	Be able to make sound decisions in different and complex situations, including different organizations and industries, by applying a mix of evidence, reason, and judgment while considering multiple perspectives
4. Professional Capacity/ Autonomy	Can demonstrate an ability to respond effectively to the ethical dilemmas that accountants face
	Be able to apply ethical frameworks and professional standards to resolve ethical dilemmas
	Can demonstrate the ability to act with integrity, transparency and in the public interest
5. Level of Communication Skills	able to write concise, well-structured and well-researched reports
	Demonstrate the ability to present and communicate their ideas clearly and effectively
	Be able to make effective and professional presentations and produce professionally formatted presentation slides and reports
6. Awareness of Limits of Knowledge	Demonstrate an awareness of the limitations of financial data as a basis for decision making
	Demonstrate an awareness of different schools of thought that govern financial reporting practice
	Can demonstrate their ability to distinguish between problems that may be resolved versus those whose risks can be mitigated using available knowledge / by requesting additional information

The above objectives are achieved in the following ways:

Depth and Breadth of Knowledge: All students are required to take a minimum of 36 credit hours related to the six broad areas of accountancy practice. For CPA accredited-stream students a total of 45 credit hours of courses related to these fields are required.

Research and Scholarship: Whilst a thesis is not required to complete the program, all required courses have an applied research component. All courses have at least one group research project, and some assignments require individual student research where originality and creativity are emphasized. In addition, in some courses, required readings include academic journal articles.

Level of Application and Knowledge: The two required six-week case courses ensure that students learn to apply and integrate knowledge from the various sub-fields of professional accountancy to complex business situations. The 3-credit hour case course develops students' proficiency in integrating and applying knowledge of these multiple fields to professional practice contexts.

Professional Capacity / Autonomy: Students in the program take a minimum of two six-week case courses which develop their critical thinking skills. Moreover, ethical decision making is a central theme of all of the program's case-based courses. In addition to the required 12-week course in business law, ethics and corporate governance themes are covered in all Financial Reporting, Management Accounting, Audit and Assurance, Strategy and Governance, Finance and Taxation courses.

Communication Skills: The majority of the program's courses require students to make group presentations where communication and presentation skills are honed.

Awareness of Limits of Knowledge: Case-based teaching will illustrate the limits of accounting as a basis of decision making and will emphasize the need for multiple perspectives in decision making. In all courses students are exposed to the multiple theoretical perspectives that underpin debates with accounting audit and related fields.

Revised November 3, 2020

Appendix B

Side-by-side comparison of the existing and proposed program requirements as they will appear in the Graduate Calendar for the DI Program

GRADUATE DIPLOMA IN INTERMEDIATE ACCOUNTING The Graduate Diploma in Intermediate Accounting develops students' academic and intellectual abilities in the core competency areas that constitute the field of accountancy. This includes courses that are fundamental to accounting as well as basic and intermediate courses in accounting. The program is suitable for graduates of four-year non-business programs and graduates of four-year business programs not accredited by CPA Ontario. The curriculum is academically rigorous and comprises **30 credits** over two terms. After completing the program, graduates will have acquired in-depth learning of all of the field's competency areas and expertise in basic and intermediate accounting, covering the Core 1 and Core 2 of the CPA qualification path. Graduates may proceed to complete their education necessary for professional certification through pursuing Schulich's Master of Accounting (advanced standing will be provided to successful graduates) or enter the CPA professional certification stream. Please visit http://schulich.yorku.ca for more information.	**GRADUATE DIPLOMA IN INTERMEDIATE ACCOUNTING** The Graduate Diploma in Intermediate Accounting develops students' academic and intellectual abilities in the core competency areas that constitute the field of accountancy. This includes courses that are fundamental to accounting as well as basic and intermediate courses in accounting. The program is suitable for graduates of four-year non-business programs and graduates of four-year business programs not accredited by CPA Ontario and graduates of three -year business or non-business programs from Indian universities assessed as being equivalent to four-year degrees by CPA Canada, and who meet the minimum 120 credit hour requirement of CPA Canada based on a course-by-course evaluation. The curriculum is academically rigorous and comprises **30 credits** over two terms. After completing the program, graduates will have acquired in-depth learning of all of the field's competency areas and expertise in basic and intermediate accounting, covering the Core 1 and Core 2 of the CPA qualification path. Graduates may proceed to complete their education necessary for professional certification through pursuing Schulich's Master of Accounting (advanced standing will be provided to successful graduates) or enter the CPA professional certification stream. Please visit http://schulich.yorku.ca for more information.

Side-by-side comparison of the existing and proposed program requirements as they will appear in the Graduate Calendar for the MAcc Program

MASTER OF ACCOUNTING The Graduate Program in Accounting is a professional master's degree program designed to develop students' academic and intellectual abilities in all fields of professional accountancy. The 12-month (three term), **45-credit** program is accredited by the Chartered Professional Accountants of Ontario. Successful graduates will have acquired in-depth knowledge in all of the subdisciplines that constitute the broad field of accounting and will have also deepened their expertise in two chosen areas. They may proceed to write the Common Final Examination immediately following graduation from the program. The program places heavy emphasis on developing students' critical thinking abilities and their capacity to operate in decision environments characterized by high degrees of ambiguity through applied case analysis.	**MASTER OF ACCOUNTING** The Graduate Program in Accounting is a professional master's degree program designed to develop students' academic and intellectual abilities in all fields of professional accountancy. The 12-month (three term), **45-credit** program is accredited by the Chartered Professional Accountants of Ontario. Successful graduates will have acquired in-depth knowledge in all of the subdisciplines that constitute the broad field of accounting and will have also deepened their expertise in two chosen areas. They may proceed to write the Common Final Examination immediately following graduation from the program. The program places heavy emphasis on developing students' critical thinking abilities and their capacity to operate in decision environments characterized by high degrees of ambiguity through applied case analysis.

Revised November 3, 2020

Cases also help to develop students' appreciation of multiple viewpoints and perspectives. This program is designed to provide a strong foundation for initial career placement (also through an optional internship in Term 3) and long-term career growth. Admission to the Master of Accounting is open to graduates from business programs. Non-business graduates are encouraged to apply for the Graduate Diploma in Intermediate Accounting. The Graduate Program in Accounting can be completed on a full-time basis. Entry is fall or summer term. Please visit http://schulich.yorku.ca for more information.	Cases also help to develop students' appreciation of multiple viewpoints and perspectives. This program is designed to provide a strong foundation for initial career placement (also through an optional internship in Term 3) and long-term career growth. Admission to the Master of Accounting is open to graduates from business programs. Non-business graduates are encouraged to apply for the Graduate Diploma in Intermediate Accounting. The Graduate Program in Accounting can be completed on a full-time basis. Entry is fall or summer term. Please visit http://schulich.yorku.ca for more information.
ADMISSION REQUIREMENTS ❖Applicants with a non-Canadian or non-business degree must first complete the Diploma in Intermediate Accounting (DIAc), which is an eight-month graduate diploma to bring internationally educated and non-business students up to speed on accounting principles and tax practices for the MAcc. ❖Applicants with CPA accredited business degrees from Canadian institutions, Schulich i/BBA students/graduates with non- accounting specializations, registered CPA students who have completed Core 1 of the PEP may be eligible for admission to Term 1 of the MAcc. ❖Schulich i/BBA students/graduates with an accounting specialization, applicants with an accounting specialization from CPA accredited business programs, registered CPA students who have completed CPA-accredited Core 2 of the PEP may be eligible for admission to Term 2 of the MAcc. ❖All applicants should possess a four-year undergraduate degree from a recognized university with a minimum B average in the last two full years (or equivalent) of academic work. Candidates are also required to have completed prerequisite courses at the undergraduate level. Schulich i/BBA students should also have a minimum B (6.0) average in all CPA courses. ❖Post-graduate work experience is recommended but not required. ❖Applicants are required to submit essays, résumé, references, and take the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) with acceptable scores on all measures thereof. These requirements will be waived if the applicant graduated from Schulich within the last five years. Proof of English language proficiency if prior studies were not completed in English: Test of English as a Foreign Language (iBT): 100 with minimum component scores of 23 or International English Language Testing System: 7.0 overall with minimum component scores of 6.5.	ADMISSION REQUIREMENTS ❖Applicants with a non-Canadian or non-business degree must first complete the Diploma in Intermediate Accounting (DIAc), which is an eight-month graduate diploma to bring internationally educated and non-business students up to speed on accounting principles and tax practices for the MAcc. ❖Applicants with CPA accredited business degrees from Canadian institutions, Schulich i/BBA students/graduates with non- accounting specializations, registered CPA students who have completed Core 1 of the PEP may be eligible for admission to Term 1 of the MAcc. ❖Schulich i/BBA students/graduates with an accounting specialization, applicants with an accounting specialization from CPA accredited business programs, registered CPA students who have completed CPA-accredited Core 2 of the PEP may be eligible for admission to Term 2 of the MAcc. ❖All applicants other than those with eligible three-year degrees from India who have completed Term 0 of their DIAc program at the Sculich campus in India should possess a four-year undergraduate degree from a recognized university with a minimum B average in the last two full years (or equivalent) of academic work. Candidates are also required to have completed prerequisite courses at the undergraduate level. Schulich i/BBA students should also have a minimum B (6.0) average in all CPA courses. ❖Post-graduate work experience is recommended but not required. ❖Applicants are required to submit essays, résumé, references, and take the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) with acceptable scores on all measures thereof. These requirements will be waived if the applicant graduated from Schulich within the last five years. Proof of English language proficiency if prior studies were not completed in English: Test of English as a Foreign Language (iBT): 100 with minimum component scores of 23 or International English Language Testing System: 7.0 overall with minimum component scores of 6.5.

DEGREE REQUIREMENTS Students must successfully complete: ❖ **45 credits of coursework**, consisting of: ❖ **36 credits of core courses**, and, ❖ **9 credits of electives** from four sets of electives. All other requirements are identical to those of Schulich's other master's programs.	DEGREE REQUIREMENTS Students must successfully complete: ❖ **45 credits of coursework**, consisting of: ❖ **36 credits of core courses**, and, ❖ **9 credits of electives** from four sets of electives. All other requirements are identical to those of Schulich's other master's programs.

Revised November 3, 2020

MAcc at a Glance (Term 0 & Term 1 Entry)

Toronto Regular DIAc/MACC Program

DIAc

Diploma in Intermediate Accounting (DIAc)

Terms 0 & 1
30.00 credits

To enter the MAcc you need:

Minimum B grade average overall

Minimum C final grade in each course

MAcc

Master of Accounting (MAcc)

Terms 2 & 3
30.00 credits

To graduate from the MAcc you need:

Minimum B- grade average overall

Minimum C- final grade in each course

CPA

Write the Common Final Examination (CFE)

CPA CHARTERED PROFESSIONAL ACCOUNTANTS ONTARIO

Diploma in Intermediate Accounting (DIAc): Terms 0 & 1

Term 0: Summer (15.00 credits)	Term 1: Fall (15.00 credits)
MACC 5101 3.00 Financial Accounting Fundamentals	**ACTG 6140 3.00** Intermediate Financial Accounting II
MACC 5211 3.00 Management Accounting Fundamentals	**ACTG 6250 3.00** Financial Reporting & Analysis
ACTG 6120 3.00 Intermediate Financial Accounting I	**ACTG 6550 1.50** Advanced Management Accounting
OMIS 6710 3.00 Management Information Systems	**ACTG 6600 3.00** Auditing Standards & Applications
PLUS: **FINE 5200 3.00** Managerial Finance OR: **MGMT 6200 3.00** Business Administration and the Law	**ACTG 6710 3.00** Introduction to Income Taxation
	MACC 6201 1.50 Multi-Competency Case Analysis for Accountants

EXIT ➤

Master of Accounting (MAcc): Terms 1, 2 & 3

Term 2: Winter (15.00 credits)	Term 3: Summer (15.00 credits)
ACTG 6301 3.00 Integrative Case Analysis for Accountants	**ACTG 6401 3.00** Advanced Integrative Case Analysis
ACTG 6720 3.00 Advanced Income Taxation	**ACTG 6501 3.00** Integrative Case Analysis: the Capstone
Assurance* **ACTG 6160 3.00** Advanced Financial Accounting **ACTG 6610 3.00** Advanced Auditing	**ACTG 6601 3.00** Management Accounting: Strategy and Performance
Tax* **ACTG 6730 3.00** Managerial Tax Planning	**ACTG 6801 3.00** Strategic Leadership Planning and Case Analysis
Performance Management* **SGMT 6000 3.00** Strategic Management	**ACTG 6650 3.00** Strategic Performance Evaluation

Core Courses

Elective Courses

***Students normally choose any TWO (2) sets of electives subject to the availability of course offerings in the 2020-2021 academic year. Students pursuing public accounting must complete Tax and Assurance.**

MAcc at a Glance (Term 0 & Term 1 Entry)

Proposed Hyderabad DIAc/MACC Program

DIAc

Diploma in Intermediate Accounting (DIAc)

Terms 0 & 1
30.00 credits

To enter the MAcc you need:

Minimum B grade average overall

Minimum C final grade in each course

MAcc

Master of Accounting (MAcc)

Terms 2 & 3
30.00 credits

To graduate from the MAcc you need:

Minimum B- grade average overall

Minimum C- final grade in each course

CPA

Write the Common Final Examination (CFE)

CPA CHARTERED PROFESSIONAL ACCOUNTANTS ONTARIO

Diploma in Intermediate Accounting (DIAc): Terms 0 & 1			Master of Accounting (MAcc): Terms 1, 2 & 3	
Term 0: Summer (15.00 credits)	Term 1: Fall (15.00 credits)		Term 2: Winter (15.00 credits)	Term 3: Summer (15.00 credits)
MACC 5101 3.00 Financial Accounting Fundamentals	ACTG 6140 3.00 Intermediate Financial Accounting II		ACTG 6301 3.00 Integrative Case Analysis for Accountants	ACTG 6401 3.00 Advanced Integrative Case Analysis
MACC 5211 3.00 Management Accounting Fundamentals	ACTG 6250 3.00 Financial Reporting & Analysis		ACTG 6720 3.00 Advanced Income Taxation	ACTG 6501 3.00 Integrative Case Analysis: the Capstone
ACTG 6120 3.00 Intermediate Financial Accounting I	ACTG 6550 1.50 Advanced Management Accounting	EXIT ➤	**Assurance*** ACTG 6160 3.00 Advanced Financial Accounting ACTG 6610 3.00 Advanced Auditing	ACTG 6601 3.00 Management Accounting: Strategy and Performance
OMIS 6710 3.00 Management Information Systems	ACTG 6600 3.00 Auditing Standards & Applications		**Tax*** ACTG 6730 3.00 Managerial Tax Planning	ACTG 6801 3.00 Strategic Leadership Planning and Case Analysis
PLUS: MGMT 6200 3.00 Business Administration and the Law	ACTG 6710 3.00 Introduction to Income Taxation		**Performance Management*** SGMT 6000 3.00 Strategic Management	ACTG 6650 3.00 Strategic Performance Evaluation
Offered in Hyderabad in summer, 1st term -- 6 weeks & 2nd term -- 4 weeks.	MACC 6201 1.50 Multi-Competency Case Analysis for Accountants			

Offered as part of regular program in Toronto

Core Courses

Elective Courses

***Students normally choose any TWO (2) sets of electives subject to the availability of course offerings in the 2020-2021 academic year. Students pursuing public accounting must complete Tax and Assurance.**

York University Board of Governors

Synopsis

472nd Meeting held on 30 November 2021

Appointments/Re-appointments

Vice-President Advancement

- Appointment of Susana Gajic-Bruyea as Vice-President Advancement for an initial five-year term commencing 1 January 2022 and ending 31 December 2027.

Provost and Vice-President Academic

- Re-appointment of Lisa Philipps as Provost and Vice-President Academic for an additional five-year term commencing 1 July 2022 and ending 30 June 2027.

Board of Governors

- Re-appointment of Antonio Di Domenico for a final four-year term commencing 1 January 2022 and ending 31 December 2026.
- Re-appointment of Loretta Lam for a final four-year term commencing 1 January 2022 and ending 31 December 2026.
- Appointment of Shamshad Madhok for a four-year term commencing 1 January 2022 and ending 31 December 2026.

Approvals

The 2022-2023 mandatory Meal Plan rates, as follows:

Mandatory Meal Plans – Proposed Rate Changes	2021/2022	2022/2023
Bronze: increase of 6%	**$ 4000**	**$ 4250**
Silver: increase of 6%	**$ 4500**	**$ 4750**
Gold: increase of 5%	**$ 5000**	**$ 5250**
Platinum: increase of 5%	**$ 5500**	**$ 5750**
Convenience: increase of 5% (optional plan for students living in suite-style accommodations)	**$ 2750**	**$ 2900**

York University Board of Governors

Synopsis

Increases to the 2022-2023 undergraduate residence rates, as follows:

Room Type	% Increase
Double rooms in dormitory-style residences (excluding Founders and Winters residences)	**3.7%**
Single rooms in dormitory-style residences (excluding Founders and Winters residences)	**3.7%**
Suite-style rooms (with kitchens) – Keele campus	**3.7%**
Suite-style rooms (without kitchens) – Glendon campus	**3.7%**

The 2022-2023 York Apartments rental rate, as follows:

- 1.2% increase for all units with continuing leases, to reflect the allowable increase established by the Ontario Rent Increase Guidelines (ORIG) for January 2022.
- 3.7% increase for all units with new leases effective May 1, 2022.

The Living Well Together: Keele Campus Vision and Strategy.

Presentations

From the President on advancing the priorities articulated in the University Academic Plan (UAP) 2020-2025, with a focus on the President/Vice-Presidents Integrated Resource Plan 2021-2022 objectives and external developments in the post-secondary environment. Updates on planning for the winter 2022 term, progress towards the development of a proposal for a School of Medicine, Markham Centre Campus, and *Living Well Together*, the Campus Vision and Strategy for the future of the Keele campus edge lands.

From Dean Mary Condon, Osgoode Hall Law School, on academic and strategic planning initiatives in the Faculty.

Reports and Remarks

Brief reports from each of the Executive, Academic Resources, External Relations, Finance and Audit, Governance and Human Resources, Investment and Land and Property committees on matters discussed in their meetings this Board cycle.

York University Board of Governors

Synopsis

Remarks from the Chair of the Board expressing thanks and appreciation to Randy Williamson for his contributions to the Board of Governors, this being the final meeting at the conclusion of his term.

The agenda for the meeting is posted on the Board of Governors website: https://www.yorku.ca/secretariat/wp-content/uploads/sites/107/2021/07/board-agenda-20211130.pdf

Pascal Robichaud, Secretary